March 15, 2024

Mindi Lehew c/o Douglas Ruppel
ATTN: Peloncillo FireScape Project
Coronado National Forest
300 W Congress Street
Tucson, AZ 85701

Submitted via https://cara.fs2c.usda.gov/Public/CommentInput?project=58434

Re: Comments on the Draft Environmental Assessment for the Peloncillo FireScape Project, #58434

Dear Ms. Lehew:

These comments are submitted on behalf of the Center for Biological Diversity regarding the Draft Environmental Assessment for the Peloncillo FireScape Project.

The Center for Biological Diversity is a non-profit environmental organization with more than 81,000 members, and more than 1.7 million members and online activists nationwide, who value wilderness, biodiversity, old growth forests, and the threatened and endangered species which occur on America's spectacular public lands and waters. Center members and supporters use and enjoy the Coronado National Forest and the Peloncillo Project area for, among other things, recreation, photography, wildlife viewing, nature study, and spiritual renewal. The Center for Biological Diversity believes that the welfare of human beings is deeply linked to nature — to the existence in our world of a vast diversity of wild animals and plants. Because diversity has intrinsic value, and because its loss impoverishes society, we work to secure a future for all species, great and small, hovering on the brink of extinction. We do so through science, law and creative media, with a focus on protecting the lands, forests, waters and climate that species need to survive. The Center has and continues to actively advocate for increased protections for species and their habitats in the forests of the American Southwest.

The Center supports the restoration of functional fire regimes at landscape scales, and we recognize and appreciate the progress made by the Forest Service in restoring fire to the landscape. Additionally, we support the overall objectives of the Peloncillo FireScape Project to restore fire across the project area, and we acknowledge that strategically located and appropriately scaled thinning and mechanical operations in some areas can support safe and effective fire operations.

However, the Draft EA for the Peloncillo FireScape Project proposes a project that is dominated by herbicides and mechanical thinning, and fails to adequately disclose and analyze the impacts of these actions. The Draft EA proposes the application of a large volume of a large number of herbicides across 53,799 acres, and mechanical treatment across 42,885 acres, equivalent to 63% and 50% of the landscape, respectively. Such actions can have substantial negative, unintended

and cumulative impacts, especially when implemented across such large areas. At those scales, the Peloncillo FireScape project becomes a mechanical thinning and herbicide project.

We urge the Forest Service to revise the proposed action to greatly reduce the area subjected to mechanical thinning, eliminate the application of herbicides in wildlands, and focus on the actions necessary to safely and effectively restore fire at the landscape scale.

Issues raised in these comments:

1. The Environmental Analysis must provide baseline information and include a range of alternatives.
2. Thinning treatments should be used only where analysis shows it is needed to safely restore fire.
3. Herbicide chemicals pose serious risks to people, wildlife, and the ecosystem.
4. The project must comply with the Roadless Area Conservation Rule.
5. The proposed action must comply with the law and the forest plan concerning the management of wilderness study areas and the Guadalupe Canyon Zoological Area.
6. The Environmental Analysis must disclose site-specific impacts and cannot utilize condition-based management.
7. Livestock grazing in the project area is inconsistent with the project objectives.
8. The Draft EA fails to adequately disclose and analyze the impacts to imperiled plants and wildlife.
9. The Forest Service must consider preparing an EIS.

I. THE ENVIRONMENTAL ANALYSIS MUST COMPLY WITH NEPA.[1]

The National Environmental Policy Act (NEPA) is "our basic national charter for protection of the environment."[2] Congress enacted NEPA to "encourage productive and enjoyable harmony between man and his environment … promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulating the health and welfare of man; and enrich the understanding of the ecological systems and natural resources important to the Nation."[3] "NEPA has twin aims. First, it places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action, and to consider reasonable alternatives that could mitigate those impacts. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process."[4]

[1] This action is governed by the Council on Environmental Quality's 1978 regulations, as amended, and so all references to the CEQ regulations are to those currently in force. Although CEQ issued a final rulemaking in July 2020 fundamentally rewriting those regulations, the new rules apply only "to any NEPA process begun after September 14, 2020," or where the agency has chosen to "apply the regulations in this subchapter to ongoing activities." 40 C.F.R. § 1506.13 (2020). This process was begun before September 14, 2020, and the Forest Service has not indicated that it has chosen to apply the new rules to this project.

[2] 40 C.F.R. § 1500.1(a).

[3] 42 U.S.C. § 4321.

[4] *Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97 (1983) (citation omitted).

A. Any Environmental Analysis Must Provide Baseline Information about the Project Area.

Information contained in a NEPA analysis "must be of high quality. Accurate scientific analysis … [is] essential to implementing NEPA."[5] An agency's "[h]ard look" analysis should utilize "the best available scientific information."[6] As part of developing an accurate analysis, NEPA documents must "succinctly describe the environment of the area(s) to be affected ... by the alternatives under consideration."[7] "Establishing appropriate baseline conditions is critical to any NEPA analysis. 'Without establishing the baseline conditions which exist ... before [a project] begins, there is simply no way to determine what effect the [project] will have on the environment and, consequently, no way to comply with NEPA.'"[8] The Ninth Circuit has explained that "[t]he establishment of a 'baseline is not an independent legal requirement, but rather, a practical requirement in environmental analysis often employed to identify the environmental consequences of a proposed agency action.'"[9]

Any NEPA document prepared for the Peloncillo FireScape Project must provide the following baseline information concerning the project area:

- Fire regimes of all plant communities and fire history and fire atlas information
- Location and status of all rare species populations
- Location, extent, and severity of invasive plants and animals and factors leading to current conditions
- Current forest and woodland structural conditions including size and density distributions
- Location, extent, and condition of old growth forests and woodlands
- Historic climax plant communities and reasons for their decline
- Location and condition of northern goshawk and Mexican spotted owl habitats
- Ecological Site Description, soils, and associated potential vegetation types or Ecological Response Units
- Occupied and potential habitat for endemic species
- Soils with potential to develop biological soil crust cover
- Current cover of biological soil crust (distinguishing light cyanobacteria, dark cyanobacteria, moss, and lichen)
- Size/density/species of shrubs present in shrub and chaparral communities
- Current authorized system roads and user-created motorized vehicle routes
- Sources of water for wildlife by season of use in the proposed treatment area
- Fences and water transport, storage, and intensity of use within and near the proposed treatment areas, and other range management infrastructure
- Location, status, and condition of livestock exclosures or areas closed to livestock

[5] 40 C.F.R. § 1500.1(b).

[6] *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1171 (10th Cir. 1999).

[7] 40 C.F.R. § 1502.15.

[8] *Great Basin Res. Watch v. BLM*, 844 F.3d 1095, 1101 (9th Cir. 2016) (quoting *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988)).

[9] *Or. Natural Desert Ass'n v. Jewell*, 840 F.3d 562. 568 (9th Cir. 2016) (quoting *Am. Rivers v. FERC*, 201 F.3d 1186, 1195 n.15 (9th Cir. 1999)).

- Incised channels, areas of severe erosion, soils with severe erosion hazard, and areas subject to increased erosion following treatment

The Draft EA—primarily in the associated specialists' reports—provides some of these baseline conditions, but the EA nonetheless fails to incorporate that information into the analyses in the Draft EA. For example, the Draft Water, Soil, and Air Resource Report states that all watersheds in the project area are assessed as "Functioning Properly"[10] but the Draft EA states that "watershed improvement treatments would be designed to help watersheds trend towards desired conditions," without identifying which conditions are out of compliance and where.[11] Similarly, while the Draft Water, Soil, and Air Resource Report indicates the soil types by area,[12] it does not identify areas of bare soil and rock, which would greatly inform the Draft EA as to locations that could serve as natural fire lines and fuel breaks.

In other cases, the Draft EA fails to provide substantive information on many of these baseline conditions—for example, occupied and potential habitat for endemics and protected species, the location and extent of impacts from livestock grazing, or the current condition of ERUs. Also, while the Draft EA identifies the fire history and fire hazard ratings across the project area, it does not identify where and whether those hazard ratings are outside the natural range of variation for each area and ERU.

B. Any Environmental Analysis Must Analyze a Range of Reasonable Alternatives.

In taking the "hard look" at impacts that NEPA requires, an EA must "study, develop, and describe" reasonable alternatives to the proposed action.[13] NEPA's requirement that alternatives be studied, developed, and described both guides the substance of the environmental decision-making and provides evidence that the mandated decision-making process has actually taken place."[14]

Federal courts explain that this mandate extends to EAs as well as EISs. "A properly-drafted EA must include a discussion of appropriate alternatives to the proposed project."[15] This alternatives analysis "is at the heart of the NEPA process, and is 'operative even if the agency finds no significant environmental impact.'"[16] Reasonable alternatives must be analyzed for an EA even where a FONSI is issued because "nonsignificant impact does not equal no impact. Thus, if an even less harmful alternative is feasible, it ought to be considered."[17] When an agency considers

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[10] Draft Water, Soil, and Air Resource Report at 11.
[11] Draft EA at 15.
[12] Draft Water, Soil, and Air Resource Report, Table 1, at 5-6.
[13] 42 U.S.C. § 4332(2)(C) & (E); 40 C.F.R. § 1508.9(b) (an EA "[s]hall include brief discussions . . . of alternatives").

[14] *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (citation omitted).

[15] *Davis v. Mineta*, 302 F.3d 1104, 1120 (10th Cir. 2002) (granting injunction where EA failed to consider reasonable alternatives).

[16] *Diné Citizens Against Ruining Our Env't v. Klein*, 747 F. Supp. 2d 1234, 1254 (D. Colo. 2010) (quoting *Greater Yellowstone Coal. v. Flowers*, 359 F.3d 1257, 1277 (10th Cir. 2004)). *See also W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1050 (9th Cir. 2013) (in preparing EA, "an agency must still give full and meaningful consideration to *all* reasonable alternatives" (emphasis added) (internal quotation and citation omitted)); 40 C.F.R. § 1502.14 (describing alternatives analysis as the "heart of the environmental impact statement").

[17] *Ayers v. Espy*, 873 F. Supp. 455, 473 (D. Colo. 1994) (internal citation omitted).

reasonable alternatives, it "ensures that it has considered all possible approaches to, and potential environmental impacts of, a particular project; as a result, NEPA ensures that the most intelligent, optimally beneficial decision will ultimately be made."[18]

In determining whether an alternative is "reasonable," and thus requires detailed analysis, courts look to two guideposts: "First, when considering agency actions taken pursuant to a statute, an alternative is reasonable only if it falls within the agency's statutory mandate. Second, reasonableness is judged with reference to an agency's objectives for a particular project."[19] Any alternative that is unreasonably excluded will invalidate the NEPA analysis. "The existence of a viable but unexamined alternative renders an alternatives analysis, and the EA which relies upon it, inadequate."[20] The agency's obligation to consider reasonable alternatives applies to citizen-proposed alternatives.[21]

Courts hold that an alternative may not be disregarded merely because it does not offer a complete solution to the problem.[22] Even if additional alternatives would not fully achieve the project's purpose and need, NEPA "does not permit the agency to eliminate from discussion or consideration a whole range of alternatives, merely because they would achieve only some of the purposes of a multipurpose project."[23] If a different action alternative "would only partly meet the goals of the project, this may allow the decision maker to conclude that meeting part of the goal with less environmental impact may be worth the tradeoff with a preferred alternative that has greater environmental impact."[24]

The courts also require that an agency adequately and explicitly explain in the EA any decision to eliminate an alternative from further study.[25] The Draft EA analyzes only two alternatives: no action and the proposed action.[26] It is inconceivable that the Forest Service can achieve some or all of its objectives for this project only by the one proposed action alternative. The Forest Service should therefore analyze one or more alternatives that 1) do not include the application of herbicides; 2) use alternatives to herbicides, such as fire and hand thinning; 3) limit livestock grazing to pursue the objectives of restoring fire regimes and reducing shrub invasion of grasslands; and 4) use strategically-placed fuels treatments that reduce the number of acres

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[18] *Wilderness Soc'y v. Wisely*, 524 F. Supp. 2d 1285, 1309 (D. Colo. 2007) (quotations & citation omitted).

[19] *Diné Citizens Against Ruining Our Env't*, 747 F. Supp. 2d at 1255 (quoting *New Mexico ex rel. Richardson*, 565 F.3d at 709). *See also Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1520 (9th Cir. 1992) ("nature and scope of proposed action" determines the range of reasonable alternatives agency must consider).

[20] *Diné Citizens Against Ruining Our Env't*, 747 F. Supp. 2d at 1256.

[21] *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin*., 538 F.3d 1172, 1217-19 (9th Cir. 2008) (finding EA deficient, in part, for failing to evaluate a specific proposal submitted by petitioner); *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1171 (10th Cir. 1999) (agency's "[h]ard look" analysis should utilize "*public comment* and the best available scientific information") (emphasis added).

[22] *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972).

[23] *Town of Matthews v. U.S. Dep't. of Transp.*, 527 F. Supp. 1055 (W.D. N.C. 1981).

[24] *North Buckhead Civic Ass'n v. Skinner*, 903 F.2d 1533, 1542 (11th Cir. 1990).

[25] *See Wilderness Soc'y*, 524 F. Supp. 2d at 1309 (holding EA for agency decision to offer oil and gas leases violated NEPA because it failed to discuss the reasons for eliminating a "no surface occupancy" alternative); *Ayers*, 873 F. Supp. at 468, 473.

[26] Draft EA at 12.

requiring mechanical treatment in order to safely facilitate the use of prescribed and managed wildfire to achieve restoration of fire-adapted ecosystems. The basis and nature of our proposed alternatives are detailed in the following sections. If the Forest Service decides not to analyze any of these reasonable alternatives, each of which permits the agency to achieve some or all of its objectives for the proposed action, it must explain why.

II. THINNING TREATMENTS SHOULD BE USED ONLY WHERE LANDSCAPE-SCALE ANALYSIS SHOWS IT IS NEEDED TO SAFELY RESTORE FIRE.

The Draft EA proposes far more thinning than is justified by the supporting analysis, and a much heavier reliance on mechanical thinning, in particular.

The Draft EA provides the following purpose and need for prescribed cutting, i.e., thinning:

> Prescribed cutting would be utilized as needed to:
>
> • Serve as a stand-alone fire surrogate to restore desired conditions in areas where risk of prescribed fire is unwarranted, such as WUI areas and within values at risk (Figure 15).
>
> • Reduce risk of undesirable fire behavior by reducing loading and continuity of surface, ladder, and canopy fuels.
>
> • Pre-treat areas to reduce fuels in a way that enables subsequent safe and effective application of prescribed fire and/or effective management of wildland fire.[27]

Given that there are no buildings within or adjacent to the project area, and the few campgrounds within the area are undeveloped, the need to utilize thinning as a stand-alone treatment in WUI should apply to a *very* limited total area.

According to the Peloncillo FireScape Project draft Fire and Fuels Report, only 1% of <u>one</u> of the planning units (Black Point Planning Unit) is rated as high fire hazard; 0% of the remaining three planning units is rated as high fire hazard. Aggregating <u>all</u> acres rated as middle hazard or higher, the total is 35%, 26%, 43%, and 24% respectively for the four planning units. Draft Fuels Report at 10. <u>These results do not support the Draft EA's proposal to use mechanical thinning on 50% of the project area, and hand thinning on 63% of the project area.</u> Rather than use thinning as a tool to create fuelbreaks and containment lines—an application that could involve a small portion of the project area—the project proposes to apply thinning on more than 200% of all acres rated as moderate to high fire hazard.

The Draft EA describes an array of tools and systems that might be used as mechanical treatments:

> Mechanical treatments would utilize specialized mechanized tracked or rubber-tired machinery. This machinery may include, but is not limited to, tractors, bulldozers, excavators, and skid-steers. Specialized attachments may be necessary for tree cutting, mastication, and grubbing.[28]

The use of mechanical systems has potentially significant impacts on terrestrial and aquatic wildlife. The season of use for some systems (mastication, for example) can have significant

[27] Draft EA at 14.
[28] Draft EA at 14.

effects on ground-nesting birds. All mechanical systems increase the risk of invasive species. The Draft EA identifies the majority of the project area as a target for mechanical treatment.

The Forest Service should analyze an alternative that identifies the amount and location of thinning treatments needed to facilitate the wildland fire treatments in the proposed action. If the Forest Service expects that the Project Design Features—such as limiting mechanized equipment to slopes less than 40%—will significantly limit the application of mechanical thinning to less than the 42,885 acres of mechanical thinning proposed and analyzed in the Draft EA, then the Forest Service should identify the actual number of acres under consideration for mechanical thinning and analyze the effects of those operations. The analysis should identify not just those areas where slopes greater than 40% would prohibit the use of mechanical thinning, but also the areas where rocky terrain, cliffs, and other terrain features could be used as natural fuelbreaks and containment lines, which would further reduce the need for thinning treatments necessary to facilitate the use of wildland fire treatments.

USFS research scientists have long worked to develop decision support, risk management, and prioritization tools for use in applications like the Peloncillo Project. Their work has been fundamental in establishing the science of optimization that is increasingly being explored and implemented in the western United States. Important considerations for utilizing wildland fire use have been identified by fire management professionals[29,30] and agency-developed risk management and decision support systems, such as Fire Effects Planning Framework,[31] provide systematic geospatial techniques for managing fire for resource benefit.

Strategically-placed treatments on portions of the landscape are used to safely facilitate the use of prescribed and managed wildfire to achieve restoration of frequent fire adapted ecosystem processes, composition, and structure. In a sweeping review of federal fire policy, Stephens and others recommended that the number one improvement that could be made in planning and implementing forest and fire management is to "mandate evaluation of opportunities for ecologically beneficial fire in land management planning."[32] Forest Service researchers have established that any science-based planning should ask "Which locations provide the greatest strategic opportunity for fuel treatments that would facilitate attainment of desired conditions?"[33]

One forest restoration researcher has stated that "restoration of surface fire in most sites and thinning in strategic sites will increase resistance to severe wildfire at the stand and landscape scales, insect pathogens, and invasive non-native species."[34] The Center agrees with that assertion and believes that the Forest Service should approach the Peloncillo FireScape Project analysis within such a framework, wherein project objectives relax the focus on strict structural

[29] Black *et al.* 2008. Wildland Fire Use Barriers and Facilitators. *Fire Management Today* 68(1): 10-14.

[30] Doane, D., J. O'Laughlin, P. Morgan, and C. Miller. 2006. Barriers to wildland fire use: A preliminary problem analysis. *International Journal of Wilderness* 12(1): 36-38.

[31] Black and Opperman 2005. Fire Effects Planning Framework: a user's guide. RMRS-GTR-163.

[32] p. 4 in Stephens, S.L., B.M. Collins, E. Biber, and P.Z. Fule. 2016. U.S. federal fire and forest policy: emphasizing resilience in dry forests. *Ecosphere* 7(11): 1-19.

[33] Peterson and Johnson 2007. Science-based strategic planning for hazardous fuel treatments. *Fire Management Today* 67(3): 13-18.

[34] p. 529 in Fule, P.Z. 2008. Does it make sense to restore wildland fire in changing climate? *Restoration Ecology* 16(4):526-531.

parameters and instead utilize cost-effective means that emphasize fire-based ecological process to establish landscape mosaics and maintain ecological integrity. If this is indeed the Project's objective, we request that the Forest Service state that clearly and convincingly in future documents.

Ager and colleagues stated in a 2013 article that "Meeting the long-term goals of dry forest restoration will require dramatic increases in prescribed and managed fire that burn under conditions that pose minimal ecological and social risk. Optimization models can facilitate the attainment of these goals by prioritizing management activities and identifying investment tradeoffs."[35]

One common fundamental similarity between all optimization models is that they seek to reduce fire-severity or minimize wildfire risk, balancing tradeoffs between the size of treatment units, the placement of treatments, and the proportion of the landscape treated.[36,37,38] Collins and colleagues[39] reviewed fuel treatment strategies, including much of Finney and Ager's work, and arrived at some basic parameters for optimizing fuel reduction treatments at the landscape scale that provide some guidance for those evaluating tradeoffs and can be used as guidelines:

- Treating 10% of the landscape provides notable reductions in modeled fire size, flame length, and spread rate across the landscape relative to untreated scenarios, but treating 20% provides the most consistent reductions in modeled fire size and behavior across multiple landscapes and scenarios.
- Increasing the proportion of area treated generally resulted in further reduction in fire size and behavior, however, the rate of reduction diminishes more rapidly beyond 20% of the landscape treated.
- Random placement of treatments requires substantially greater proportions of the landscape treated compared with optimized or regular treatment placement.
- The improvements offered by optimized treatments are reduced when 40%-50% of the landscape is unavailable for treatment due to land management constraints.
- Treatment rates beyond 2% of the landscape per year yield little added benefit.

The Peloncillo FireScape Project analysis should identify strategic treatment priorities incorporating scientific information relevant to landscape-scale restoration within the project landscape. These include:

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[35] p. 11 in Ager, A.A., N.M. Vaillant, and A. McMahan. 2013. Restoration of fire in managed forests: a model to prioritize landscapes and analyze tradeoffs. *Ecosphere* 4(2): 1-19.

[36] Collins *et al.* 2010. Challenges and approaches in planning fuel treatments across fire-excluded forested landscapes. *Journal of Forestry* Jan/Feb 2010: 24-31.

[37] Chung 2015. Optimizing fuel treatments to reduce wildland fire risk. *Current Forestry Reports* 1: 44-51.

[38] Krofcheck, D.J., M.D. Hurteau, R.M. Scheller, and E.L. Loudermilk. 2017a. Prioritizing forest fuels treatments based on the probability of high-severity fire restores adaptive capacity in Sierran forests. *Global Change Biology DOI: 10.1111/gcb.13913.*

[39] Collins *et al.* 2010.

- Strategically placed treatments to support fire use in the long-term, utilizing anchor points such as natural fuel breaks, previously treated or burned areas, roads, and waterways
- Reasons why the location, timing and intensity of proposed mechanical actions will support a coherent restoration strategy
- Landscape scale assessment of opportunities to manage unplanned natural ignitions for resource benefits
- An analysis of fire-risk at multiple spatial scales using broader criteria[40]
- surface fuel density and arrangement

We appreciate that the Peloncillo FireScape Project intends to use prescribed and natural fire to accomplish a range of objectives. The NEPA analysis should provide meaningful analysis of how and where unplanned ignitions could be used to accomplish resource management objectives, and what the range of effects of fire use could be. Adverse effects of fire control practices to the environment should be analyzed and disclosed where proposed treatments are designed to increase the effectiveness of fire suppression.[41] While the Draft EA discusses the effects of prescribed and managed fire, it fails to disclose and analyze the effects of fire suppression activities.

Considering the fire modeling that we assume is already underway by the Forest Service for the Pelocillo Project, and the key takeaways reviewed here, the Center believes that a modified version of the methodology developed by the Hurteau lab and used by Krofcheck and colleagues[42,43] is completely appropriate for the Peloncillo FireScape. Their research[44] has developed "prioritization strategies for implementing fuel treatments…with the goal to maximize treatment efficacy using optimal placement and prescription options under typical and extreme fire weather conditions." [45] Their optimization model, which mechanically treats only the operable areas with a high probability of mixed- and high-severity fire, was shown in multiple fire simulations to be as effective as thinning all operable acres at reducing wildfire burn severity and facilitating landscape scale low-severity fire restoration. This approach could inform landscape-scale restoration planning nationwide, as "Testing of strategic placement of treatments

[40] These criteria have long-been identified as fundamental factors in effective fire and fuels-management planning, for example, *see*: Agee, J.K., and C.N. Skinner. 2005. Basic principles of forest fuel reduction treatments. *Forest Ecology and Management* 211(1): 83-96. *See also* Reinhardt, E. D., R.E. Keane, D. E. Calkin, and J. D. Cohen. 2008. Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States. *Forest Ecology and Management* 256:1997-2006.

[41] Backer, D.M, S.A. Jensen, and G.R. McPherson. 2004. Impacts of fire suppression activities on natural communities. *Conservation Biology* 18: 937-46.

[42] Krofcheck *et al*. 2017a.

[43] Krofcheck, D.J., M.D. Hurteau, R.M. Scheller, and E.L. Loudermilk. 2017. Restoring surface fire stabilizes forest carbon under extreme fire weather in the Sierra Nevada. *Ecosphere* 8(1): 1-18.

[44] Krofcheck *et al*. 2017a; Krofcheck *et al*. 2017b.

[45] http://www.hurteaulab.org/

by resource managers will add data in the years ahead and provide information that can be shared and applied in other locations."[46] The authors summarize their methods here:

> "We developed three scenarios: no-management, naive placement, and optimized placement. Both management scenarios employed combinations of mechanical thinning and prescribed burning. The naive placement scenario aimed to simulate mechanical thinning from below and prescribed fire to all forest types that have experienced a fuels load departure from their historic condition due to fire exclusion. Within each forest type that received mechanical thinning, thinning was constrained based on operational limits (slope>30%, which totaled 22,436 ha available for mechanical thinning). The optimized placement scenario further constrained the area that received mechanical thinning by limiting thinning to areas that also had a high probability of mixed- and high-severity wildfire…In both treatment scenarios, stands identified for mechanical treatment were thinned from below, removing roughly one-third of the live tree biomass over the first decade of the simulation. Stands selected for mechanical thinning were only thinned once in the simulations, and all thinning was completed within the first decade."[47]

Their results suggested that thinning the most optimum 33% of the operable acres with slopes less than 30% could achieve the same effect as thinning all operable acres. The study was simulated in the Sierra Nevada of California, but the authors asserted that their approach was "broadly applicable to historically frequent-fire ecosystems, or systems which have transitioned away from a low severity and fuel limited fire regime to one characterized by high-severity fires."[48]

Current Forest Service policy and guidance calls for strategic treatment implementation. The dramatic deficit of annual acreage burned in frequent-fire adapted forests has led senior Forest Service scientists to call for increasing the scale and rate of fuels treatments following three key strategies:[49] 1) Increasing the extent of fuel treatments if resources permit; 2) Designing treatments to create conditions conducive to naturally ignited fires burning under desired conditions while fulfilling an ecological role; and 3) Placing treatments to reduce hazard while providing options for firefighting when highly valued resources and assets are present.

The National Strategy for Vegetation and Fuels Management recommends implementing strategically placed fuel treatments to interrupt fire spread across landscapes, and managing wildfire for resource objectives and ecological purposes to restore and maintain fire-adapted ecosystems and achieve fire-resilient landscapes.[50] Both of these strategies are highly applicable to the Peloncillo FireScape protect area.

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[46] p. 15 in Peterson, D. L. and M.C. Johnson. 2007. Science-based strategic planning for hazardous fuel treatment. *Fire Management Today* 67(3):13-18.

[47] p. 2 in Krofcheck *et al*. 2017a.

[48] p. 6 in Krofcheck *et al*. 2017a.

[49] p. 301 in Vaillant and Reinhardt 2017. An evaluation of the Forest Service hazardous fuels treatment program—are we treating enough to promote resiliency or reduce hazard? *Journal of Forestry* 115(4): 300-308.

[50] pp. 1 and 58 in National Strategy 2014: https://www.forestsandrangelands.gov/strategy/thestrategy.shtml.

By focusing limited resources on specific key locations, expanded wildland fire use for resource benefit can be utilized to achieve fuels reduction and ecological restoration objectives. The National Strategy clearly asserts that "Prescribed fire and managing wildfire for resource objectives have the greatest potential for treating large areas at lower cost than mechanical treatments."[51] Researchers have long asserted that "Prioritizing restoration efforts is essential because resources are limited. An initial focus on areas most likely to provide benefits and that present a low risk of degradation of ecological values will build experience and credibility."[52] Prominent fire scientists have affirmed that "Strategically placing fuel treatments to create conditions where wildland fire can occur without negative consequences and leveraging low-risk opportunities to manage wildland fire will remain critical factors to successful implementation of the [National] Strategy."[53] This approach is further called for in the 2012 Mexican Spotted Owl Recovery Plan, which suggests that restoration projects: "Conduct a landscape-level risk assessment to strategically locate and prioritize mechanical treatment units to mitigate the risk of large wildland fires while minimizing impact to PACs."[54]

We urge the Forest Service to consider a strategic treatment alternative, or to explain why it cannot. Such an approach is under development as part of the Four Forests Restoration Initiative in northern Arizona. We also urge the Forest Service to look to the Environmental Assessment for the Kaibab Plateau Environmental Restoration Project, which identified specific treatment blocks both by location and sequencing, based on fire hazard rating and natural features across the project area.[55] This allowed for a more meaningful analysis of the project's impacts on the forest structure and fire risk, as well as on wildlife and habitat composition over time.

III. THE FOREST SERVICE SHOULD ANALYZE A NON-HERBICIDE ALTERNATIVE.

The Forest Service proposes spraying chemicals across the project area "to prevent regrowth after prescribed fire, prescribed cutting, mastication, or grubbing treatments and/or as a primary treatment to address broad-scale invasion of woody species that are difficult to control with fire or mechanical means."[56] Herbicide application would also be used "to restore vegetation structure and composition in sites where the proportion of tree and shrub cover exceeds desired conditions."[57]

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[51] p. 58 in National Strategy 2014

[52] Brown *et al*. 2004. Forest restoration and fire: principles in the context of place. *Conservation Biology* 18(4): 903-912.

[53] p. 8 in Barnett *et al*. 2016. Beyond fuel treatment effectiveness: characterizing interactions between fire and treatments in the US. *Forests* 7(237): 1-12.

[54] p. 262 in USFWS 2012 Mexican Spotted Owl Recovery Plan, First Revision (*Strix occidentalis lucida*). Southwest Region U.S. Fish and Wildlife Service Albuquerque, New Mexico.

[55] Kaibab Plateau Ecological Restoration Project, Environmental Assessment, U.S. Forest Service, Kaibab National Forest, 2020, at 11. https://www.fs.usda.gov/project/?project=54226

[56] Draft EA at 15.

[57] Draft EA at 15.

While the Draft EA states that "herbicide would not be applied indiscriminately nor uniformly,"[58] the document provides no criteria or guidance for how determining where and how chemical application would be applied, making it impossible for the public or the decisionmaker to understand the nature and extent of the impacts of such chemical use, nor does it analyze the impacts of the specific applications either by chemical or by location. Instead, the Draf EA proposes the application of twelve different chemical herbicides across 53,799 acres. This is 63% of the entire project analysis area and 100% of the project area outside of wilderness study areas and the Guadalupe Canyon Zoological Area. Application across 100% of available acres is the definition of indiscriminate and uniform application.

Herbicides are poisons that should be used with maximum restraint on our public lands, and we cannot support widespread herbicide use on natives like velvet mesquite (*Prosopis velutina),* whitethorn acacia *(Vachellia constricta),* catclaw acacia (*Senegalia greggii)* or catclaw mimosa *(Mimosa aculeaticarpa)*, manzanita (*Arctostaphylos spp*), oak species (*Quercus spp),* and juniper species (*Juniperus spp*), all of which are identified as target species in the Draft EA.[59] Indeed, the Draft EA fails even to identify the specific circumstances in which vegetative sprouting and growth would constitute a problem, let alone disclose and analyze where such issues occur, are expected to occur, how the problem is defined, and how decisions will be made to use herbicides and to what extent.

Even when used as instructed, herbicides pose grave risks to people, wildlife and native plants. For example, Dicamba, often sprayed on genetically engineered soybeans and cotton, is known to drift from where it's applied, leading to more than 5 million acres of damaged crops, trees and backyard gardens over the past few years.[60] Its toxic spread is so common that BASF and Bayer were ordered to pay $265 million to Missouri peach farmers whose trees were damaged.[61] Roadside application of ACP in Oregon unintentionally killed more than 2,000 ponderosa pines, including cherished old growth trees. That led the state to ban most uses of ACP. And DuPont was ordered in a class-action lawsuit to pay landowners when the herbicide kills their trees.[62]

Many herbicides are highly resistant to breakdown, sometimes taking years to decay. Due to their persistence, wood chips from poisoned trees and grass clippings cannot be used for compost because the toxins can continue to kill vegetables and flowers. In response, states have warned consumers and farmers that feed and compost may include persistent chemical residues.[63] Many of the toxic herbicides that the Forest Service has proposed to utilize have not been evaluated in more than a decade, despite the expanding evidence of risk to plants and animals. In their

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[58] Draft EA at 15.

[59] Draft EA at 15.

[60] See https://www.npr.org/sections/thesalt/2018/09/27/651262491/a-drifting-weedkiller-puts-prized-trees-at-risk (last viewed Sep. 4, 2020).

[61] https://cen.acs.org/business/BASF-Bayer-held-liable-dicamba/98/i8 (last viewed Sep. 4, 2020).

[62] https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=257938 (last viewed Sep. 4, 2020); https://www.reuters.com/article/dupont-lawsuits/judge-approves-dupont-settlement-of-herbicide-lawsuits-idUSL1N0BD38420130213 (last viewed Sep. 4, 2020).

[63] https://www.maine.gov/dacf/php/pesticides/documents2/messages/Important%20Warning%20Regarding%20Persistent%20Herbicides.pdf (last viewed Sep. 4, 2020).

programmatic assessment of herbicides for forest use, the Environmental Protection Agency has ignored the Endangered Species Act's requirement to study the potential harms from these chemicals to endangered species.

A. The proposed action violates NEPA.

NEPA is "our basic national charter for protection of the environment."[64] Its purpose is to "encourage productive and enjoyable harmony between man his environment" and to "promote efforts which will prevent or eliminate damage to the environment . . . ."[65] As a threshold matter, the Forest Service must establish a purpose or need for the herbicide spraying proposals. A proposal to use herbicides when there isn't even an established problem necessitating their use would be arbitrary, capricious and contrary to the law.[66]

As described above, any subsequent NEPA document should articulate a range of reasonable alternatives. NEPA analysis "shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made."[67] NEPA requires agencies to "[s]tudy, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[68] In fact, the alternatives section is considered the heart of an environmental analysis.[69] At least one alternative should forego the use of herbicides.

In using herbicides, the Forest Service must comply with the principles of Integrated Pest Management (IPM). The Forest Service must consider an actual IPM approach. If the Forest Service deployed an IPM approach in addressing noxious weed issues, it would have to include an alternative that addressed the role of grazing in the spread of weeds and other alternatives for addressing concerns around the role of juniper and oak around fire. Simply deploying herbicides while continuing to allow cattle to spread noxious weeds, as the project here proposes to do, fails to comport with IPM.

NEPA's core function is to "help public officials make decisions that are based on understanding of environmental consequences,"[70] by requiring federal agencies to take a "hard look" at potential environmental consequences and environmentally enhancing alternatives "as part of the agency's process of deciding whether to pursue a particular agency action."[71]

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[64] 40 C.F.R. § 1500.1(a).

[65] 42 U.S.C. § 4321. 71.

[66] The APA confers a right of judicial review on any person that is adversely affected by a federal agency action. 5 U.S.C. § 702. Upon review, the Court shall "hold unlawful and set aside agency actions . . . found to be arbitrary, capricious, and abuse of discretion, or otherwise not in accordance with law." *Id*. § 706(2)(A).

[67] 40 C.F.R. § 1502.02(g); *see id*. § 1500.1(c) ("NEPA's purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action").

[68] 42 U.S.C. § 4331(2)(E).

[69] 40 C.F.R. § 1502.14.

[70] 40 C.F.R. § 1500.1(c).

[71] *Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council*, 462 U.S. 87, 100 (1983); *see also* 42 U.S.C. § 4332(1) ("[T]he policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in [NEPA].").

The Forest Service must give more than a perfunctory glance at potential impacts of herbicide use in order to meet NEPA's hard look mandate. While the Draft EA identifies the array of herbicides that could potentially be used across the project, [72] it does not identify which herbicides would be applied in any particular area, how much, in what circumstances, or for how long. Nor does the Draft EA consider the cost of the herbicides, the equipment needed to deploy them including personal protective equipment for those spraying them, the cost of herbicide trainings including associated travel and time away from other tasks, the cost of secure herbicide storage, the cost of implementing procedures in the event of herbicide poisoning or really any of the costs associated with herbicide use, and the cumulative costs associated with government subsidy and underwriting of the grazing program which is ostensibly the source of most noxious weeds on the forest.

In any NEPA analysis, an agency must adequately describe the affected environment, and disclose the environmental consequences of the proposed action and each of the alternatives to the proposed action.[73] The Forest Service must adequately describe the units within the project area that it seeks to deploy toxic herbicides on, or the consequences of action under the various alternatives on these many unique zones.

The Forest Service is also required to consider three types of environmental effects: those that are direct, indirect, and cumulative.[74] Direct effects "are caused by the action and occur at the same time and place."[75] Indirect effects "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."[76] A cumulative impact results from the incremental impact of the proposed action "when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . undertakes such other actions."[77] "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."[78] Under NEPA, "effects" and "impacts" are synonymous terms that include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health."[79] The agency's statements "shall be supported by evidence that the agency has made the necessary environmental analyses."[80]

The Forest Service must look at the direct, indirect and cumulative effects of herbicide use. For example, one direct effect of herbicide use will be dead flowering plants and less food available for pollinators. The Peloncillo FireScape Project area is home to countless species—literally, as there has been no thorough survey—of native bees and other pollinators, and NEPA requires an analysis of the direct effects on such vulnerable species. NEPA also requires an analysis of the

[72] Draft EA at 113-115.

[73] 40 C.F.R. § 1502.1.

[74] *Id*. § 1508.25(c).

[75] *Id*. § 1508.8(a).

[76] *Id*. § 1508.8(b).

[77] *Id*. § 1508.7.

[78] *Id*.

[79] *Id*. § 1508.8 (emphasis added); see also id. § 1508.14. 74.

[80] *Id*. § 1502.1.

indirect effects of reduced forage for pollinators. Furthermore, there must be a cumulative effects analysis of herbicide use with all the other impacts that are directly foreseeable, such as grazing, OHV use, wildfire, logging, road maintenance, climate change, etc.

B. The proposed action violates the Endangered Species Act.

In considering permitting the use of herbicides on the Peloncillo Project, the Forest Service must comply with its substantive mandates under the Endangered Species Act. While the Draft EA acknowledges the obvious risks that herbicides pose to plants in the project area, and the indirect impacts to certain animals, neither the Draft EA nor the associated Draft Biological Evaluation of Wildlife for the Peloncillo FireScape Project discuss the potential for direct and cumulative effects to protected species.

In looking at the impacts of the various herbicides to be proposed, the Forest Service must recognize that the EPA has never completed Section 7 consultation under the ESA for any pesticide considered under this proposal. In the wake of EPA's failure to complete ESA consultations on pesticides, the Forest Service and U.S. Fish and Wildlife Service cannot simply rely on other risk assessments unrelated to ESA consultation to determine effects to species. Restricting herbicide use formulations to those containing either EPA or Forest Service risk assessments cannot meet ESA requirements for this project. These risk assessments fail to comply with the basic mandates of the Act, as their purpose is pesticide registration, and they do nothing to actually look at effects on individual listed species, as the ESA requires.

The Endangered Species Act was enacted to provide a "means whereby the ecosystems upon which endangered species and threatened species depend may be conserved…[and] a program for the conservation of such endangered species and threatened species."[81] As the Supreme Court has unequivocally summarized, the ESA's "language, history and structure" make clear and "beyond doubt" that "Congress intended endangered species to be afforded the highest of priorities," and endangered species should be given "priority over the 'primary missions' of federal agencies."[82] Simply put, "[t]he plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost."[83] The ESA defines "conservation" to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary."[84]

The EPA and Forest Service risk assessments do not afford endangered species the highest of priorities, and cannot be used to analyze the effects of herbicides on listed species. To fulfill the substantive purposes of the ESA, each federal agency is required to engage in consultation with the Services to "insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the adverse modification of habitat of such species ... determined ... to be critical…."[85]

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[81] 16 U.S.C. §§ 1531-1544; 16 U.S.C. § 1531(b).

[82] *Tenn. Valley Auth. V. Hill*, 437 U.S. 153, 174-75 (1978).

[83] *Id.* at 184.

[84] 16 U.S.C. § 1532(3).

[85] *Id.* § 1536(a)(2).

The obligation to "insure" against a likelihood of jeopardy or adverse modification requires the agency to give the "benefit of the doubt" to endangered species and to place the burden of risk and uncertainty on the agency taking the proposed action.[86]

Section 7 "consultation" is required for "any action [that] may affect listed species or critical habitat."[87] Agency "action" means "all activities or programs of any kind authorized, funded or carried out in whole or in part by Federal agencies."[88] This definition is meant to be expansive and includes, but is not limited to, "(a) actions intended to conserve listed species or habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air."[89]

Under the joint regulations implementing the ESA, an action agency such as the Forest Service must initiate consultation under Section 7 whenever its discretionary action "may affect" a listed species or critical habitat.[90] Only where the action agency determines that its action will have "no effect" on listed species or designated critical habitat is the consultation obligation lifted.[91]

Adoption of any herbicide triggers the need for Section 7 consultation for the threatened and endangered plants and animals of the southwest sky islands.

Section 7(a)(2) requires that the action agency determine at the earliest possible time whether the action "may affect" listed species, or else issue a "no effect" determination.[92] The "may affect" threshold is "relatively low" to ensure that "actions that have any chance of affecting listed species or critical habitat—even if it is later determined that the actions are not likely to do so—require at least some consultation under the ESA."[93] If the "may affect" threshold is met, the agency must determine if the action is "likely to adversely affect" (LAA) or "not likely to adversely affect" (NLAA) listed species and obtain concurrence from the Services. When a LAA determination is made, formal consultations with the Services are required.

When the Forest Service initiated consultation on this action, which it already has done, it should have not only considered the direct effects when making this threshold call of whether the herbicides may affect listed species, but it also should have considered indirect and cumulative effects. For example, for a listed bird, the Forest Service must not only consider the direct effect of lost habitat if herbicides are used to kill trees they nest in, but it also must consider indirect effects such as the loss of plants that provide habitat for the insects that the bird consumes. And it must consider the cumulative effects, like of bioaccumulation of the herbicide in soil and associated effects on insects and soil microbes. There is no indication in the EA that the Forest Service has addressed such impacts.

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[86] *See Sierra Club v. Marsh*, 816 F.2d 1376 1385 (9th Cir. 1987).

[87] 50 C.F.R. § 402.14

[88] *Id.* at § 402.02.

[89] *Id.*

[90] 50 C.F.R. § 402.14(a); *See also Ass'n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644 (2007).

[91] 50 C.F.R. § 402.14(a).

[92] 50 C.F.R. § 402.14(a).

[93] *Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1028 (9th Cir. 2012).

In addition to requiring consultation under Section 7, Section 9 prohibits any person—whether a private or governmental entity—to "take" any endangered species of fish or wildlife listed under the ESA.[94] "Take" is defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such conduct."[95] FWS has defined "harm" to include "significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering."[96] Only an incidental take statement issued along with a final biological opinion can shield the action agency from the prohibition against take. If the Forest Service allows any herbicide use prior to completing formal consultation with the U.S. Fish and Wildlife Service, it will very likely be committing unauthorized take, and will be subject to the consequences provided under the Act.

C. The widespread application of herbicides on native plants is an inappropriate use and risk.

We recognize the ecological threats posed by non-native, invasive plants, and we understand that sometimes the only viable control method involves herbicides. Below, we discuss how the treatment of noxious weeds should proceed within a robust and well-defined Integrated Pest Management approach. We also recognize the need to reduce fuels and thin some areas with high levels of shrubs.

However, we cannot support the use of herbicides on native plants under the current proposal. The species listed in the Draft EA for treatment with herbicide are native to the project area and provide many ecosystem services, including wildlife habitat and food, carbon sequestration, and soil stabilization, among other benefits. These species are common, native plants that have never been considered noxious or invasive species.

Removing native plants with chemicals that have complex and at-times unpredictable cumulative effects will lead to additional cumulative ripple effects throughout the ecosystem. Treatments that rely on herbicide as an essential next step following a forest thinning will not benefit the overall health of the ecosystem, and because of significant risk of drift and persistence, there are many cumulative impacts to wildlife and native plants which cannot be easily quantified.

Thinning treatments are commonly proposed in many forests as mitigation against drought and climate change with the goal to remove biomass so it is less likely to be removed by fire. Promoting massive herbicide use following thinning treatments ignores the cumulative effects of thinning and chemicals on the health of the forest and its biota.

The Draft EA does not specify—let alone quantify—the purported benefits of herbicide application on native vegetation. Nor does the Draft EA compare the presumed benefits to the likely costs to water quality, wildlife habitat, and cumulative herbicide use associated with removing these native species from the environment. The negative consequences of herbicide use for restoration may well outweigh any benefits.

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[94] 16 U.S.C. § 1538(a)(1)(B).

[95] *Id.* § 1532(19).

[96] 50 C.F.R. § 222.102.

D. Livestock grazing is a primary contributor to shrub invasion into grasslands and the spread of noxious weeds.

While the Draft EA addresses the impacts of fire and treatments and the spread of exotic plants on livestock forage,[97] it fails to disclose or consider the impacts that livestock have had in facilitating shrub invasion into grasslands, altering fire regimes, and spreading exotic invasive species. The failure to disclose these impacts violates NEPA's hard look mandate.

Any subsequent NEPA document must analyze the relationship between livestock production and invasive plant occurrence and persistence, and provide project direction that reduces or eliminates the functional pathways between livestock and altered fire regimes, shrub invasion, and invasive plants.

E. The Project must follow Integrated Pest Management protocols.

Prevention is the most cost-effective action that the Forest Service can perform to maintain the health and integrity of the forest. Reliance on herbicide means that the Forest Service has failed their mandate to follow Integrated Pest Management protocols.[98] The Draft EA fails to mention the term at all.

The Natural Resources Conservation Service (NRCS) defines Integrated Pest Management as "*a site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies*."[99] IPM was developed as a process for addressing pests of all kinds as a response to the overuse of chemical pesticides and their associated environmental harms.[100] Pesticide overuse threatens environmental health, disrupts food webs, contaminates drinking water, and undermines pesticide effectiveness.[101]

IPM has become the standard framework for using pesticide on public lands across the Federal government and the Federal, Insecticide, Fungicide, and Rodenticide Act (FIFRA) states that "…the [Environmental Protection Agency] Administrator in cooperation with the Secretary of Agriculture shall develop approaches to the control of pests based on integrated pest management…".[102] IPM practice is codified into the laws and regulations of agencies that

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[97] See, e.g., Draft EA at 36-39, 76.

[98] U.S. Forest Service, "FSM 2100 - Environmental Management Chaper 2150 - Pesticide Management and Coordination," 2014.

[99] NRCS, "Integrated Pest Management Code 595" (Natural Resource Conservation Service, 2010), https://efotg.sc.egov.usda.gov/references/public/NY/nyps595.pdf.

[100] Gerrit Cuperus, Richard Berberet, and Phillip Kenkel, "The Future of Integrated Pest Management," in *E. B. Radcliffe,W. D. Hutchison & R. E. Cancelado [Eds.], Radcliffe's IPM World Textbook* (St. Paul, MN: University of Minnesota, n.d.), https://ipmworld.umn.edu.

[101] John Peterson Myers et al., "Concerns over Use of Glyphosate-Based Herbicides and Risks Associated with Exposures: A Consensus Statement," *Environmental Health* 15 (February 17, 2016), https://doi.org/10.1186/s12940-016-0117-0; Maarten Bijleveld van Lexmond et al., "Worldwide Integrated Assessment on Systemic Pesticides," *Environmental Science and Pollution Research* 22, no. 1 (January 1, 2015): 1–4, https://doi.org/10.1007/s11356-014-3220-1; Gregor J. Devine and Michael J. Furlong, "Insecticide Use: Contexts and Ecological Consequences," *Agriculture and Human Values* 24, no. 3 (September 1, 2007): 281–306, https://doi.org/10.1007/s10460-007-9067-z.

[102] "Federal Insecticide, Fungicide, and Rodenticide Act," 7 U.S. Code § 136w–3 (c) (2012).

manage public lands including: the Department of Interior (DOI)[103], and its Bureau of Land Management (BLM)[104] as well as the United States Department of Agriculture's United States Forest Service (USFS)[105] and the National Parks Service (NPS)[106].

The most important use of IPM on public land is for the management of invasive species as directed by Executive Orders 13112[107] and 13751,[108] which instruct Federal Agencies to prevent the introduction and spread of invasive species. There are approximately 50,000 alien species in the United States that impact the survival of 42% of all threatened and endangered species.[109] Alien species degrade ecosystems by suppressing natural biodiversity, altering food webs, changing nutrient cycling, introducing novel diseases, and can cause significant economic damage.

Alien species cause up to $120 billion a year in environmental damages[110] and the U.S. government spends billions of dollars a year to mitigate and control alien species.[111] IPM is essential to stopping the spread and introduction of alien species on public land, and per the basic tenants of IPM, efforts must focus on the root causes of species spread. We believe that pesticides should only be used as a last resort, and the Forest Service must not rely on reflexive or reactive pesticide use. Already, there are countless examples of federal land management agencies claiming to adhere to the tenets of IPM but in reality, deploying dangerous pesticides as a first line of attack. In the absence of clear direction for herbicide use, the Forest Service unwittingly lays the groundwork to be another example of this tragic phenomenon.

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[103] U.S. Department of the Interior, "Department of the Interior Departmental Manual," Chapter 1: Integrated Pest Management Policy, Section 1.5, Part 517, Series 31: Environmental Quality Programs (U.S. Department of the Interior, May 31, 2007).

[104] U.S. Bureau of Land Management, "BLM Vegetation Treatments Using Herbicide Final Programmatic EIS Record of Decision" (U.S. Bureau of Land Management, 2007), 4–6, https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=70300&dctmId=0b0003e880de5eb8.

[105] U.S. Forest Service, "Forest Service Manual 2100-Environmental Management," Chapter 2150 (U.S. Forest Service, March 19, 2013), page 6. Departmental Regulation 9500-4.

[106] U.S. National Park Service, "Management Policies 2006" (Washington, D.C.: U.S. National Park Service, 2006), 48, https://www.nps.gov/policy/MP_2006.pdf.

[107] William Clinton J, "Executive Order 13112 Invasive Species" (Federal Register, February 3, 1999), https://www.govinfo.gov/content/pkg/FR-1999-02-08/pdf/99-3184.pdf.

[108] Barack Obama, "Executive Order 13751 Safeguarding The Nation From the Impacts of Invasive Species" (Federal Register, December 8, 2016).

[109] David Pimentel, Rodolfo Zuniga, and Doug Morrison, "Update on the Environmental and Economic Costs Associated with Alien-Invasive Species in the United States," *Ecological Economics*, Integrating Ecology and Economics in Control Bioinvasions, 52, no. 3 (February 15, 2005): 273–88, https://doi.org/10.1016/j.ecolecon.2004.10.002.

[110] Pimentel, Zuniga, and Morrison.

[111] National Invasive Species Council, "National Invasive Species Council Crosscut Budget" (Washington, D.C.: National Invasive Species Council, January 25, 2018), https://www.doi.gov/sites/doi.gov/files/uploads/crosscut_25january2018.pdf.

IPM is a process that requires planning that is land-use- and pest-specific that uses the minimum level of pest suppression necessary.[112] IPM relies on prevention, avoidance, monitoring, and suppression (PAMS) techniques in order to decrease pest pressure from a combination of biological, cultural, and chemical controls.[113] Successful management requires the preparation and implementation of strategic, long-term plans with defined threshold values for pest control actions that rely on prevention, education, and restoration that enhance the overall health of an ecosystem.[114] Early Detection and Rapid Response (EDRR) is essential to identifying, monitoring, and removing new alien species from an environment.[115] In IPM, chemical control may only be the last line of defense after preventative and avoidance practices have been implemented, and in IPM, even when pesticides are used, the least toxic options are deployed.

The project must include meaningful criteria for the use of herbicides in order to comply with the Forest Service mandate to use integrated pest management principles and protocols to reduce the likelihood of default reliance on herbicides. The analysis should present a strategic, long-term plan with defined thresholds and PAMS techniques that would address noxious weeds now and in the future; these must be developed. Because the Draft EA fails to mention the term, let alone take a hard look at implementing this policy, the analysis violates NEPA.

F. The project must consider the specific risks associated with individual pesticides.

The following section offers an overview of the risks posed to wildlife, water, and ecosystems by many of the specific chemical herbicides proposed for use in the Draft EA. See Draft EA at 113-115 (listing herbicides proposed for use). The science reviewed here must be incorporated into any analyses of herbicide use on the Peloncillo FireScape Project. The Draft EA lacks nearly all of this information, violating NEPA.

2,4-D

2,4-D is a persistent, mobile herbicide used for control of broadleaf plants. It is a widespread water contaminant with monitoring data from the USGS, EPA, USDA, the California Department of Pesticide Regulation and the Washington Department of Agriculture finding traces of the pesticide in 37-59 percent of all surface water samples tested.[116] 2,4-D is highly prone to pesticide drift events due to its volatility and toxicity and has consistently been the most common pesticide involved in drift complaints.[117]

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[112] NRCS, "Integrated Pest Management Code 595."

[113] NRCS.

[114] Joseph M. DiTomaso, "Invasive Weeds in Rangelands: Species, Impacts, and Management," *Weed Science* 48, no. 2 (April 2000): 255–65, https://doi.org/10.1614/0043-1745(2000)048[0255:IWIRSI]2.0.CO;2.

[115] Lindy Garner, "Early Detection and Rapid Response to New Invasive Grasses in North Central Wyoming" (U.S. Fish and Wildlife Service, April 2019), https://www.doi.gov/sites/doi.gov/files/uploads/wyoming_invasive_grasses_report.pdf.

[116] EPA. Preliminary Ecological Risk Assessment for Registration Review of 2,4-D. June 29, 2016. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2012-0330-0047. Pg 24.

[117] AAPCO. Association of American Pesticide Control Officials. 2005 Pesticide Drift Enforcement Survey Report. 2005; Available from: https://www.centerforfoodsafety.org/files/aapco-2005_29712.pdf.

The labeled, aquatic use of 2,4-D can kill aquatic plants and invertebrates that endangered fish rely on for food and shelter, resulting in the U.S. National Marine Fisheries Service concluding that the use of 2,4-D was likely to jeopardize the continued existence of endangered Pacific salmon and steelhead species.[118] In addition the EPA determined that nearly all current labeled uses of 2,4-D were likely to adversely affect endangered amphibians and reptiles like the endangered California Red-legged Frog and Alameda Whipsnake.[119]

In a 2016 evaluation, EPA found that 2,4-D can cause direct harm to all plants and animals if used according to the EPA-approved label.[120] Harms found specifically for non-crop uses, like the ones proposed, are to ESA-listed vascular aquatic plants,[121] chronic harm to all species of birds that feed on short grasses,[122] acute harm to all species of mammals,[123] sublethal effects to pollinators such as bees,[124] and all terrestrial plants.[125] The potential for harm to non-target plants from spray drift extends up to 250 ft away from the site of application at an application rate of 2 lb/acre (the maximum application rate for non-crop uses is twice as high at 4 lb/acre).[126]

There have been a high number of incidents involving human harm from 2,4-D. From 2007 to 2012, there were over 2,000 incidents reported to the EPA involving neurological, respiratory, liver, and kidney dysfunctions.[127] EPA also identified occupational exposure risks of concern via inhalation.[128] The EPA also found that "Based on currently available toxicity data, which demonstrate effects on the thyroid and gonads following exposure to 2,4-D, there is concern

[118] NMFS. National Marine Fisheries Service Endangered Species Act Section 7 Consultation. Biological Opinion Environmental Protection Agency Registration of Pesticides 2,4-D, Triclopyr BEE, Diuron, Linuron, Captan, and Chlorothalonil. June 30, 2011. Available here: https://www3.epa.gov/pesticides/endanger/litstatus/final-4th-biop.pdf.

[119] EPA. Risks of 2,4-D Use to the Federally Threatened California Red-legged Frog (Rana aurora draytonii) and Alameda Whipsnake (Masticophis lateralis euryxanthus). Pesticide Effects Determination. Feb. 20, 2009. Available from: https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/2-4-d/analysis.pdf.

[120] *Id.*

[121] *Id.* at 45-46.

[122] *Id.* at 47-48.

[123] *Id.* at 48-49.

[124] *Id.* at 50-51.

[125] *Id.* at 51-55.

[126] *Id.* at 63.

[127] EPA. 2,4-D: Tier II Incident Report. June 28, 2016. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2012-0330-0046. Pgs 2-3.

[128] EPA. 2,4-D. Revised Occupational and Residential Exposure Assessment for Registration Review. Nov. 15, 2016. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2012-0330-0085.

regarding its endocrine disruption potential."[129] Altered hormone levels have also been associated with urinary 2,4-D levels in human epidemiological studies.[130,131]

Aminopyralid

EPA has found that aminopyralid poses a high risk to non-target plants, particularly broad-leafed plants. Native plants in terrestrial and aquatic habitats were both found to have high risk of decreased biomass when growing near where aminopyralid is sprayed.[132] The highest risks were for spot treatment (which has a higher application rate than other treatment methods), with nearby native plants potentially exposed to aminopyralid runoff and spray drift at levels more than 100 times higher than the known toxic concentration.[133] Risks of concern for ground and aerial applications of aminopyralid extended more than 1,000 ft from the site of application.[134]

Clopyralid

EPA has found that some clopyralid uses can expose small and medium-sized mammals to levels of clopyralid that can decrease body weight and food consumption.[135] Risks of concern were also identified for endangered herbivorous birds, reptiles and terrestrial amphibians, and terrestrial invertebrates, based on short-term exposures from the labelled uses of clopyralid.[136] The EPA found that clopyralid spray drift can result in harm to ESA-listed and non-ESA listed plants at a distance of more than 1,000 ft from where it is sprayed.[137] When modelling the *lowest approved application rate*, EPA found that plants can be harmed more than 1000 feet away from aerial applications and nearly 500 feet away from ground applications.[138]

Dicamba

Dicamba does not adsorb to soil and is highly mobile with the potential to contaminate and persist in groundwater.[139] A nationwide sampling of surface waters by the EPA indicated 40%

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[129] EPA. *Reregistration Eligibility Decision for 2,4-D*. 2005; Available from: http://www.epa.gov/pesticides/reregistration/REDs/24d_red.pdf.

[130] Garry, V.F., et al., Biomarker correlations of urinary 2,4-D levels in foresters: genomic instability and endocrine disruption. Environ Health Perspect, 2001. 109(5): p. 495-500.

[131] Schreinemachers, D.M., Perturbation of lipids and glucose metabolism associated with previous 2,4-D exposure: a cross-sectional study of NHANES III data, 1988-1994. Environ Health, 2010. 9: p. 11.

[132] EPA. Aminopyralid: Draft Ecological Risk Assessment for Registration Review. June 30, 2020. Page 40. Found here: https://www.regulations.gov/document/EPA-HQ-OPP-2013-0749-0048.

[133] *Id.* at Table 9-2.

[134] *Id.* at page 41.

[135] EPA. Clopyralid: Draft Ecological Risk Assessment for Registration Review. Dec. 14, 2018. Pg. 7. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2014-0167-0032.

[136] *Id.* at 33, 39.

[137] *Id.* at 41.

[138] *Id.* at 42.

[139] EPA. Reregistration Eligibility Decision (RED) Document for Dicamba and Associated Salts. 2006. Available from: http://www.epa.gov/pesticides/reregistration/REDs/dicamba_red.pdf.

were contaminated with dicamba[140] and dicamba is known to run off into water bodies following rainfall.[141] It was one of the most frequently detected herbicides in water and sediment samples in California,[142] and 90 percent of air samples throughout Canada's agricultural region contained dicamba with distributions being suggestive of both local and long-distance transport.[143] Dicamba is characterized as a volatile compound and prone to extensive spray drift, which can severely impact non-target crops and wild plants.[144,145] Bottom line: Dicamba doesn't stay put, it migrates away from the area of application and contaminates the surrounding environment.

This is exemplified by the unprecedented amount of damage to crop fields, backyard gardens, century-old trees, and natural landscapes that has occurred in the recent years. It is estimated that nearly 5 million acres of crop fields were damaged by dicamba drift in 2017 and 2018 alone.[146,147] 200-year old cypress trees,[148] oak trees,[149] and fruiting trees[150] have not escaped the onslaught of damage from this pesticide. A federal USDA advisory committee has recommended that a buffer of no less than one mile be implemented between dicamba and any sensitive, non-target plant.[151]

In 2021, 3,500 incidents were reported to the EPA regarding off-target harm to plants from dicamba.[152] However the extent of harm is likely much greater as EPA has found that real-world

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[140] EPA. Office of Drinking water. Dicamba: health advisory. 1987.

[141] Carroll, M. J., Hill, R. L., Pfeil, E., & Herner, A. E. Washoff of Dicamba and 3,6-Dichlorosalicylic Acid from Turfgrass Foliage. Weed Technology, 1993. 7(2): p. 437-442.

[142] Ensminger, M.P., et al. Pesticide occurrence and aquatic benchmark exceedances in urban surface waters and sediments in three urban areas of California, USA, 2008-2011. Environ Monit Assess, 2013. 185(5): p. 3697-710.

[143] Yao, Y., et al. Spatial and temporal distribution of pesticide air concentrations in Canadian agricultural regions. Atmosperic Environment, 2006. 40(23): p. 4339-4351.

[144] Behrens, R. and W. Lueschen. Dicamba Volatility. Weed Science, 1979. 27(5): p. 486-493.

[145] Egan, J.F. and D.A. Mortensen. Quantifying vapor drift of dicamba herbicides applied to soybean. Environ Toxicol Chem, 2012. 31(5): p. 1023-31.

[146] Bradley, K. A Final Report on Dicamba-injured Soybean Acres. University of Missouri. October 30, 2017. Available here: https://ipm.missouri.edu/ipcm/2017/10/final_report_dicamba_injured_soybean/.

[147] Bradley, K. July 15 Dicamba injury update. Different Year, same questions. July 19, 2018. Available here: https://ipm.missouri.edu/IPCM/2018/7/July-15-Dicamba-injury-update-different-year-same-questions/.

[148] Charles, D. A Drifting Weedkiller Puts Prized Trees At Risk. National Public Radio. September 27, 2018. Available here: https://www.npr.org/sections/thesalt/2018/09/27/651262491/a-drifting-weedkiller-puts-prized-trees-at-risk.

[149] Hettinger, J. Complaints surge about weed killer dicamba's damage to oak trees. Midwest Center for Investigative Reporting. October 9, 2017. Available here: https://investigatemidwest.org/2017/10/09/complaints-surge-about-weed-killer-dicambas-damage-to-oak-trees/.

[150] Ruff, C. Jury Awards Missouri Peach Farmer $15 Million In Damages In Dicamba Suit. St. Louis Public Radio. February 14, 2020. Available here: https://news.stlpublicradio.org/post/jury-awards-missouri-peach-farmer-15-million-damages-dicamba-suit#stream/0.

[151] Fruit and Vegetable Industry Advisory Committee (FVIAC). 2018 – 2020 Recommendations. Available here: https://www.ams.usda.gov/sites/default/files/media/2018_2020FVIACRecommendations.pdf.

[152] EPA. Status of Over-the-Top Dicamba: Summary of2021 Usage, Incidents and Consequences of Off-Target Movement, and Impacts of Stakeholder-Suggested Mitigations (DP# 464173: PC Code 128931). December 15, 2021. Found here: https://www.regulations.gov/document/EPA-HQ-OPP-2020-0492-0021.

damage from dicamba is likely 25-fold higher than what is reported to the agency.[153] This off-target damage from dicamba occurred on over one million acres of land in the U.S., including crop fields, backyard gardens, wildlife refuges and native plant reserves.[154] Hundreds of incidents occurred in areas where there are federally-listed endangered or threatened species.[155]

Doses of dicamba meant to approximate herbicide drift reduced and delayed the flowering of multiple plant species, reducing the floral resources that pollinators rely on in farmed regions.[156] Dicamba levels far below those estimated to be contained in particle and vapor drift are known to reduce plant diversity.[157] Similarly, drift-level rates of dicamba were found to reduce flowering of multiple plants, a reduction scientists have found coincides with reduced visitation by pollinators.[158] Studies have also shown dicamba to be particularly harmful to milkweed, a plant the monarch caterpillar uses as its only food source, putting the monarch butterfly at risk of harm.[159]

The EPA has determined that small birds and mammals would exceed the agency's level of concern for dicamba if they foraged on plants or insects in treated fields following treatment and that dicamba had the potential for causing risk to endangered birds, mammals, and non-target plants.[160] Furthermore, the EPA stated that "mammals could potentially be at risk for developmental/reproductive effects or for direct effects on foraging behavior when chronically exposed to dicamba as a result of the labeled uses of the herbicide."[161] Dicamba has also been shown to disrupt behavioral patterns in fish[162] and low doses were shown to induce mortality in coho salmon that were given a biologically-appropriate seawater challenge.[163]

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[153] *Id.* at Page 9.
[154] *Id.* at pages 43-44.
[155] *Id.*
[156] Bohnenblust, E.W., et al. Effects of the herbicide dicamba on non-target plants and pollinator visitation. Environ Toxicol Chem, 2015.

[157] Egan, J.F, Bohnenblust, E, Goslee, S, Mortensen, D.A, and Tooker, J. Herbicide drift can affect plant and arthropod communities. Agriculture, Ecosystems, and Environment, 2014. 185: p. 77-87.

[158] Bohnenblust, E.W, Vaudo, A.D, Egan, J.F, Mortensen, D.A, Tooker, J.F. Effects of the herbicide dicamba on nontarget plants and pollinator visitation. Environ Toxicol Chem, 2016. 35(1): p. 144–151

[159] Donley, N. A Menace to Monarchs Drift-prone Dicamba Poses a Dangerous New Threat to Monarch Butterflies. Center for Biological Diversity. March 2018. Available here: https://www.biologicaldiversity.org/species/invertebrates/monarch_butterfly/pdfs/Menace-to-Monarchs.pdf.

[160] EPA. Reregistration Eligibility Decision (RED) Document for Dicamba and Associated Salts. 2006. Available from: http://www.epa.gov/pesticides/reregistration/REDs/dicamba_red.pdf.

[161] *Id.*

[162] Ruiz de Arcaute, C., S. Soloneski, and M.L. Larramendy, Evaluation of the genotoxicity of a herbicide formulation containing 3,6-dichloro-2-metoxybenzoic acid (dicamba) in circulating blood cells of the tropical fish *Cnesterodon decemmaculatus*. Mutat Res Genet Toxicol Environ Mutagen, 2014. 773: p. 1-8.

[163] Lorz, H., et al., EPA. Corvallis Environmental Research Laboratory. Office of Research and Development. Effects of selected herbicides on smolting of coho salmon. 1979.

There are early indications that dicamba may affect hormone signaling[164,165] and induce developmental toxicities[166] at biologically-relevant doses. Multiple studies have also indicated that it is a mutagen.[167,168,169] Researchers at the National Institutes of Health found dicamba exposure is associated with elevated risk of liver and intrahepatic bile duct cancer and chronic lymphocytic leukaemia.[170]

Glyphosate

A 2015 EPA analysis found multiple environmental harms from glyphosate use. Use of glyphosate in accordance with the label was found to:

1) Result in concentrations that can potentially impact the survival and biomass of aquatic plants, upland plants, and riparian/wetland plants.[171]
2) Result in residues on foliage that can potentially impact the growth of herbivorous birds, reptiles and terrestrial amphibians.[172]
3) Potentially impact the growth and reproduction of terrestrial mammals following ground applications of glyphosate.[173]

This analysis also indicated that considerable no-spray buffers would be needed to keep off-target plants from being harmed by glyphosate use, more than 1000 feet for certain aerial applications and nearly 400 feet for certain ground applications.[174] The states of California and Arkansas both adopted mandatory no-spray buffers of 500 feet for aerial applications.[175]

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[164] Zhu, L., et al. Dicamba affects sex steroid hormone level and mRNA expression of related genes in adult rare minnow (Gobiocypris rarus) at environmentally relevant concentrations. Environ Toxicol, 2015. 30(6): p. 693-703.

[165] Goldner, W.S., et al. Hypothyroidism and pesticide use among male private pesticide applicators in the agricultural health study. J Occup Environ Med, 2013. 55(10): p. 1171-8.

[166] Greenlee, A.R., T.M. Ellis, and R.L. Berg. Low-dose agrochemicals and lawn-care pesticides induce developmental toxicity in murine preimplantation embryos. Environ Health Perspect, 2004. 112(6): p. 703-9.

[167] Ruiz de Arcaute, C., S. Soloneski, and M.L. Larramendy, Evaluation of the genotoxicity of a herbicide formulation containing 3,6-dichloro-2-metoxybenzoic acid (dicamba) in circulating blood cells of the tropical fish *Cnesterodon decemmaculatus*. Mutat Res Genet Toxicol Environ Mutagen, 2014. 773: p. 1-8.

[168] Cenkci, S., et al. Evaluation of 2,4-D and Dicamba genotoxicity in bean seedlings using comet and RAPD assays. Ecotoxicol Environ Saf, 2010. 73(7): p. 1558-64.

[169] Gonzalez, N.V., et al. A combination of the cytokinesis-block micronucleus cytome assay and centromeric identification for evaluation of the genotoxicity of dicamba. Toxicol Lett, 2011. 207(3): p. 204-12.

[170] Lerro, C. C., Hofmann, J. N., Andreotti, G., Koutros, S., Parks, C. G., Blair, A., … Beane Freeman, L. E. (2020). Dicamba use and cancer incidence in the agricultural health study: An updated analysis. International Journal of Epidemiology, 49(4), 1326-1337. doi:10.1093/ije/dyaa066.

[171] EPA. Preliminary Ecological Risk Assessment for Glyphosate and Its Salts. Sept. 8, 2015 page 2. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0361-0077.

[172] *Id.*

[173] *Id.*

[174] *Id.* page 92.

[175] EPA. Drinking Water Assessment for the Registration Review of Glyphosate. June 15, 2017. Pg. 16.

Ecological incident data also reinforce the finding that the current labelled uses of glyphosate are having devastating effects to plant and animal life outside of the sprayed field.[176] Approximately 600 incidents have been reported and logged on the Ecological Incident Information System (EIIS) and Avian Monitoring Information System (AIMS) databases. A separate Incident Data System (IDS) database has identified 269 separate aggregate incident reports. Ecological incidents are also significantly underreported for pesticides so this should be viewed as the absolute bare minimum of ecological incidents that involve glyphosate.

A final biological evaluation was released by the EPA on how use of glyphosate may affect all endangered and threatened species in the United States. The agency concluded that glyphosate would "Likely Adversely Affect" 1676 out of 1795 listed species (93%) and adversely modify 759 out of 792 designated critical habitat in the U.S.[177] This includes nearly every single listed species and critical habitat in the United States and all that reside in or near the action area being considered.[178]

The EPA has found that glyphosate poses a risk to a federally listed amphibian, the California Red-legged frog, making a Likely to Adversely Affect determination for the species.[179] Some glyphosate formulations and co-formulants have been found to be "highly toxic" to certain species of fish.[180]

Researchers have found negative associations between glyphosate use and monarch population size.[181] Use of glyphosate has been tied to widespread declines of milkweed, which is essential to monarch butterfly survival.[182]

The World Health Organization's International Agency for Research on Cancer ("IARC") conducted an exhaustive review of the publicly available scientific literature in 2015 and

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[176] EPA. Preliminary Ecological Risk Assessment for Glyphosate and Its Salts. Sept. 8, 2015. Pgs 59-62. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0361-0077.

[177] EPA. Final National Level Listed Species Biological Evaluation for Glyphosate. November 2021. Available here: https://www.epa.gov/endangered-species/draft-national-level-listed-species-biological-evaluation-glyphosate. Executive Summary.

[178] *Id.* at Appendix 4-1

[179] EPA. Risks of Glyphosate Use to Federally Threatened California Red-legged Frog (Rana aurora draytonii). Pesticide Effects Determination. October 17, 2008. Available here: https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/glyphosate/determination.pdf.

[180] *Id.* at 82, 84.

[181] Semmens, B. X., D. J. Semmens, W. E. Thogmartin, R. Wiederholt, L. Lopez-Hoffman, J. E. Diffendorfer, J. M. Pleasants, K. S. Oberhauser and O. R. Taylor (2016). "Quasi-extinction risk and population targets for the Eastern, migratory population of monarch butterflies (Danaus plexippus)." Sci Rep 6: 23265.

[182] Center for Biological Diversity, Petition to Protect the Monarch Butterfly (*Danaus Plexippus Plexippus*) Under the Endangered Species Act, 7 (2014), available at http://www.biologicaldiversity.org/species/invertebrates/pdfs/Monarch_ESA_Petition.pdf ("A primary threat to the monarch is the drastic loss of milkweed caused by increased and later season use of the herbicide glyphosate in conjunction with widespread planting of genetically engineered, herbicide-resistant corn and soybeans in the Corn Belt region of the United States and to planting of genetically-engineered cotton in California. In the Midwest, nearly ubiquitous adoption of, glyphosate-resistant 'Roundup Ready' corn and soybeans has caused a precipitous decline of common milkweed, and thus of monarchs, which lay their eggs only on milkweeds. The majority of the world's monarchs originate in the Corn Belt region of the United States where milkweed loss has been severe, and the threat that this habitat loss poses to the resiliency, redundancy, and representation of the monarch cannot be overstated.").

concluded that glyphosate is "probably carcinogenic to humans" (Group 2A).[183] IARC carefully weighed evidence in three areas, and found that: 1) There was sufficient evidence to conclude that glyphosate causes cancer in animal studies; 2) There was limited evidence that exposure to glyphosate causes cancer (non-Hodgkin lymphoma) in humans; and 3) There was strong evidence that glyphosate can damage DNA and induce oxidative stress,[184] two well characterized pathways that can lead to cancer.[185]

IARC's finding that glyphosate causes cancer in animals prompted California's Office of Environmental Health Hazard Assessment to list glyphosate as a known carcinogen under California's Proposition 65 law.[186] The agency has also finalized a No Significant Risk Level for glyphosate, which estimated the daily exposure level that will result in a 1/100,000 chance of developing cancer, of 1.1 mg/day.[187]

Hexazinone

EPA has found that approved hexazinone uses can expose non-target terrestrial plants to as much as 500 times the concentration needed to cause harm and that harmful exposures can exist greater than 1,000 feet from the treated area.[188] EPA found that non-agricultural uses of hexazinone can result in risks of concern to small herbivorous and insectivorous birds, reptiles and terrestrial amphibians[189] and that mammals can be exposed to as much as 80-times the amount known to cause reduced female pup body weights at birth and during lactation.[190]

For the granular uses of the herbicide, EPA found that large birds, reptiles and terrestrial amphibans would only need to ingest one granule to exceed EPA's risk of concern for ESA-listed species and three granules for non-ESA-listed species.[191] The outlook is even worse for

[183] WHO. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 112: Some Organophosphate Insecticides and Herbicides. Glyphosate. 2017. Available at: http://monographs.iarc.fr/ENG/Monographs/vol112/mono112.pdf

[184] *Id.*

[185] Klaunig, J.E., et al., The role of oxidative stress in chemical carcinogenesis. Environ Health Perspect, 1998. 106 Suppl 1: p. 289-95; and Lee, S.J., et al., Distinguishing between genotoxic and non-genotoxic hepatocarcinogens by gene expression profiling and bioinformatic pathway analysis. Sci Rep, 2013. 3: p. 2783.

[186] OEHHA. The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment. Glyphosate Listed Effective July 7, 2017, as Known to the State of California to Cause Cancer. Available at: https://oehha.ca.gov/proposition-65/crnr/glyphosate-listed-effective-july-7-2017-known-state-california-cause-cancer.

[187] OEHHA. The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment. Amendment to Section 25705 No Significant Risk Level - Glyphosate April 10, 2018. Available at: https://oehha.ca.gov/proposition-65/crnr/amendment-section-25705-no-significant-risk-level-glyphosate-april-10-2018.

[188] EPA. Registration Review – Preliminary Ecological Risk Assessment for Hexazinone. September 17, 2015. Pgs. 69, 79. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0755-0021.

[189] *Id.* at 62-63.

[190] *Id.* at 49, 67.

[191] *Id.* at 76-77.

mammals, needing to ingest less than one granule to trigger the EPA's risk of concern for ESA-listed and non-ESA-listed mammals.[192]

The EPA has found that the labelled uses of hexazinone can potentially harm a federally listed amphibian, the California Red-legged frog, making a Likely to Adversely Affect determination for the species.[193]

Hexazinone is designated as Toxicity Category 1 for acute eye irritation – the most severe category – causing corneal opacity and irritation to humans that are exposed.[194] Consistent with its known harm to human health, occupational exposures from the labelled uses of hexazinone were estimated by EPA to expose workers to levels known to cause harm.[195] This was the case for multiple uses modelled with more protective PPEs than required by the label.[196]

Oryzalin

Oryzalin is classified by EPA as "likely to be carcinogenic to humans" based on the development of thyroid tumors.[197] Birds have a high risk of fatality after ingesting plants or insects containing residues of oryzalin and lower, chronic doses can result in eggshell thinning.[198] Exposure estimates by EPA indicate that birds can be exposed to doses of oryzalin post-application that are up to five times higher than a fatal dose and up to 15 times higher than concentrations that result in eggshell thinning.[199] Mammals can also be harmed by oryzalin exposure with EPA finding that mammals can experience loss in body weight at concentrations of up to 18 times lower than their estimated exposure following application.[200] Even after one application of oryzalin at the lowest application rate of 2 lbs a.i./A, mammlas are estimated to be exposed to oryzalin at levels 3-15 times higher than that known to cause reductions in growth. Oryzalin can also harm nearby native plants at distances of 125-351 ft away from the application site for forestry uses.[201]

In 2012, the National Marine Fisheries Service found that oryzalin would cause jeopardy to about half of Endangered Species Act (ESA)-listed salmonids and adversely modify about half of all salmonid critical habitat.[202] EPA also found that oryzalin was "Likely to Adversely Affect"

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[192] *Id*. at 77.

[193] EPA. Risks of Hexazinone Use to Federally Threatened California Red-legged Frog (Rana aurora draytonii). Pesticide Effects Determination. February 20, 2008. Available here: https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/hexazinone/analysis.pdf.

[194] EPA. Hexazinone: Draft Human Health Risk Assessment for Registration Review. June 3, 2015. Pg. 5. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0755-0019.

[195] *Id.* at 37-44.

[196] *Id.*

[197] EPA. Oryzalin. Human Health Draft Risk Assessment (DRA) for Registration Review. September 13, 2017. Page 21. Found here https://www.regulations.gov/document/EPA-HQ-OPP-2010-0940-0038.

[198] EPA. Registration Review: Preliminary Environmental Fate and Ecological Risk Assessment for Oryzalin. June 7, 2017. Page 40 and 54. Found here: https://www.regulations.gov/document/EPA-HQ-OPP-2010-0940-0036.

[199] *Id.* at Table 20.

[200] *Id.* at Page 40 and Table 21.

[201] *Id.* at Table 25.

[202] National Marine Fisheries Service Endangered Species Act Section 7 Consultation of Pesticides Oryzalin, Pendimethalin, Trifluralin. Final Biological Opinion. May 31, 2012. Tables 115 and 116. Found here: https://media.fisheries.noaa.gov/dam-migration/63806569pesticides_batch5opinion.pdf.

the California red-legged frog and California Tiger Salamander and potentially modify both of their critical habitats.[203,204]

Picloram

Picloram is highly persistent, with a half-life that can range from one month to 116 years.[205] It is one of the most mobile pesticides still used in the U.S. and a known water contaminant that has been detected in water systems in 43 different states.[206,207] EPA found that 136 water systems servicing more than 8 million people across the country had detections of picloram above the health safety threshold.[208]

EPA also found that picloram has a "very high potential" to leach into groundwater, and that once it reaches groundwater will be unlikely to degrade for multiple years.[209] EPA goes so far as to state:

> Eventual contamination of ground water is virtually certain in areas where picloram residues persist in the overlying soil. Once in ground water, picloram is unlikely to degrade, even over a period of several years.[210]

USGS found that 10% of groundwater testing sites had detections of picloram in Wyoming and that picloram was detected at the highest concentration of any other pesticide tested.[211]

Picloram's main effect to humans is liver toxicity. Picloram acid is also designated highly toxic through inhalation exposure, meaning it has a high potential to cause harm to humans through the airway.[212]

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[203] EPA. Risks of Oryzalin Use to Federally Threatened California Red-legged Frog (Rana aurora draytonii). June 19, 2008. Found here: https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/oryzalin/determination.pdf.

[204] EPA. Risks of Oryzalin Use to the Federally Threatened and Endangered California Tiger Salamander (Ambystoma californiense). September 30, 2010. Found here: https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/2010/oryzalin/assessment2.pdf.

[205] California Office of Environmental Health Hazard Assessment. Public Health Goals: Carbofuran, Diquat, Endrin, Picloram, Thiobencarb in Drinking Water. September 2016. Available here: https://oehha.ca.gov/media/downloads/water/chemicals/phg/pesticidebatch092316.pdf.

[206] EPA. R.E.D. FACTS Picloram. August 1995. Available here: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-005101_1-Aug-95.pdf.

[207] EPA. The Analysis of Regulated Contaminant Occurrence Data from Public Water Systems in Support of the Second Six-Year Review of National Primary Drinking Water Regulations. September 2010. Available here: https://www.epa.gov/sites/production/files/2014-12/documents/815b09006.pdf.

[208] *Id.*

[209] EPA. R.E.D. FACTS Picloram. August 1995. Available here: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-005101_1-Aug-95.pdf.

[210] *Id.* at 5.

[211] United States Geological Survey, Wyoming Department of Agriculture and Wyoming Department of Environmental Quality. Pesticides in Ground Water - Fremont County, Wyoming, 1998-99. March 2000. Available here: https://pubs.usgs.gov/fs/fs03500/fs03500.pdf.

[212] EPA. R.E.D. FACTS Picloram. August 1995. Available here: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-005101_1-Aug-95.pdf.

Picloram is a restricted use pesticide based on its extreme toxicity to non-target plants. EPA found that estimated concentrations from the labelled use of picloram are hundreds to thousands of times the amount known to cause harm to non-target plants.[213] A recent EPA risk assessment found that the labelled use of picloram exceed the agency's risk levels of concern to terrestrial dicot plants by as much as 1,200-fold.[214] Even when particle drift was modelled under potential restriction scenarios, harm to non-target plants still occurred over 1,000 feet from the use site from ground application alone.[215]

Tebuthiuron

EPA found that the current, labelled uses of tebuthiuron resulted in acute and chronic risks of concern to: mammals, terrestrial-phase amphibians, reptiles, small-sized birds, terrestrial and aquatic plants.

Nearby birds, amphibians, and reptiles were estimated to be exposed to levels of tebuthiuron that cause chronic harm for 140 days out of the year and at a distance of up to 139 ft from the site of application.[216] Mammals were estimated to be exposed to a level of tebuthiuron that was 45 times higher than the level known to cause harm.[217] Harm to mammals from tebuthiuron could extend up to 100 days out of the year at a distance of up to 479 ft.[218] The labelled uses of tebuthiuron can expose terrestrial plants to over 1000 times the level known to cause harm. Harm to plants can also extend 1000 ft from the site of use.[219]

EPA found that bystanders could be exposed to concerning levels of tebuthiuron at distances of up to 150 ft away.[220] And that occupational users can be harmed by some uses of the pesticide, even when wearing the label-required PPEs.[221]

Triclopyr

EPA has found that the range, pastureland, and rights-of-way uses of triclopyr can expose birds, reptiles and terrestrial amphibians to levels of the herbicide that cause reduced survival of offspring.[222] The same uses can expose mammals to 37 times the amount of triclopyr known to

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[213] *Id.* at 6.

[214] EPA. Picloram: Draft Ecological Risk Assessment for Registration Review. March 27, 2020. Pg. 56. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2013-0740-0055.

[215] *Id.* at 58.

[216] EPA. Transmittal of the Draft Environmental Fate and Ecological Risk Assessment in Support of the Registration Review of Tebuthiuron. May 20, 2014. Pg. 3. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0327-0042.

[217] *Id.*

[218] *Id.*

[219] *Id.*

[220] EPA. Tebuthiuron: Draft Human Risk Assessment. June 12, 2014. Pg 25. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0327-0041.

[221] *Id.* at 26-27.

[222] EPA. Triclopyr (Acid, Choline salt, TEA salt, BEE): Draft Ecological Risk Assessment for Registration Review. Sept. 30, 2029. Pg. 6. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2014-0576-0026.

reduce litter size.[223] All labelled uses of triclopyr were found to expose adult and larval bees to levels estimated to reduce survival and larval emergence.[224] Harm to bee larva was estimated more than 1000 feet from the application site.[225] Terrestrial plants were also estimated to be exposed to levels of triclopyr that were known to cause harm more than 1000 feet away from the site of application, even for ground applications.[226]

Triclopyr butoxyethyl ester (BEE) is classified as "highly toxic" to aquatic organisms. Range, pastureland and meadow uses of BEE can expose fish and aquatic invertebrates to levels of the pesticide known to cause acute harm.[227] The EPA has found that triclopyr poses a risk to a federally listed amphibian, the California Red-legged frog, making a Likely to Adversely Affect determination for the species.[228]

IV. THE PELONCILLO FIRESCAPE PROJECT MUST COMPLY WITH THE ROADLESS AREA CONSERVATION RULE.

The Draft EA states that "no new or temporary roads will be constructed in the IRA."[229] However, the project proposes activities that would directly threaten the roadless area value of the IRA. "Within the Peloncillo IRA, the use of prescribed fire, prescribed cutting, watershed improvement treatments, and herbicide application is proposed…Prescribed cutting (hand thinning and mechanical treatment) is proposed within the Peloncillo IRA…in some cases, construction of fire control lines may require removal of herbaceous vegetation, pruning, and/or cutting fuels with hand tools, and clearing all fine fuels down to mineral soil."[230] That is, thinning within the IRA would be more extensive than can be accomplished with hand thinning, such thinning would require the operation of mechanized equipment into the IRA, the proposed creation of fire control lines is expected to be functionally the same as road-building, and the IRA would be subject to widespread and ongoing herbicide treatment.

The 56,501-acre Peloncillo Inventoried Roadless Area (IRA) was established by the 2001 Roadless Area Conservation Rule, which prohibits road construction, road reconstruction, and timber harvesting within the IRA. The U.S. Forest Service adopted the Roadless Area Conservation Rule (Roadless Rule) in 2001 "to protect and conserve inventoried roadless areas on National Forest System lands."[231] The rule observed:

> Inventoried roadless areas provide clean drinking water and function as biological strongholds for populations of threatened and endangered species. They provide

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[223] *Id.* at 8.

[224] *Id.* at 9.

[225] *Id.* at 90.

[226] *Id.* at 94-95.

[227] *Id.* at 9.

[228] EPA. Risks of Triclopyr Use to Federally Threatened California Red-legged Frog (Rana aurora draytonii) Pesticide Effects Determination. October 19, 2009. Available here: https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/triclopyr/analysis.pdf.

[229] Draft EA at 22.

[230] Draft EA at 20.

[231] Forest Service, Special Areas, Roadless Area Conservation, Final Rule, 66 Fed. Reg. 3244 (Jan. 12, 2001).

> large, relatively undisturbed landscapes that are important to biological diversity and the long-term survival of many at risk species. Inventoried roadless areas provide opportunities for dispersed outdoor recreation, opportunities that diminish as open space and natural settings are developed elsewhere. They also serve as bulwarks against the spread of non-native invasive plant species and provide reference areas for study and research.[232]

The Roadless Rule "prohibits road construction, reconstruction, and timber harvest in inventoried roadless areas because they have the greatest likelihood of altering and fragmenting landscapes, resulting in immediate, long-term loss of roadless area values and characteristics."[233]

Compliance with the Roadless Rule is a significant issue in the Peloncillo FireScape Project, which includes the entirety of the 56,501 acre Peloncillo Inventoried Roadless Area, making up the majority—66%—of the 85,129 acres of the project. In order to comply with the Roadless Rule, the Forest Service must identify project design features and goals specifically to protect roadless area values and characteristics within the IRA.

A. The Roadless Area Conservation Rule.

The Roadless Rule generally prohibits road construction and timber removal within IRAs across the National Forest System outside of Colorado and Idaho.[234] The Roadless Rule contains exceptions to the logging prohibition, but they are narrowly tailored:

> Notwithstanding the prohibition in paragraph (a) of this section, timber may be cut, sold, or removed in inventoried roadless areas if the Responsible Official determines that one of the following circumstances exists. The cutting, sale, or removal of timber in these areas *is expected to be infrequent.*
>
> (1) The cutting, sale, or removal of *generally small diameter timber* is needed for one of the following purposes *and* will *maintain or improve one or more of the roadless area characteristics* as defined in § 294.11.
>
> (i) To *improve* threatened, endangered, proposed, or sensitive species habitat; or
>
> (ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.[235]

The Roadless Rule defines "roadless area characteristics" as including:

> (1) High quality or undisturbed soil, water, and air;
>
> (2) Sources of public drinking water;

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[232] 66 Fed. Reg. at 3245.

[233] 66 Fed. Reg. at 3244.

[234] 36 C.F.R. § 294.12(a) (generally prohibiting road construction); 36 C.F.R. § 294.13(a) (generally prohibiting timber removal).

[235] 36 C.F.R. § 294.13(b)(1) (emphasis added).

(3) Diversity of plant and animal communities;

(4) Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land;

(5) Primitive, semi-primitive nonmotorized and semi-primitive motorized classes of dispersed recreation;

(6) Reference landscapes;

(7) Natural appearing landscapes with high scenic quality;

(8) Traditional cultural properties and sacred sites; and

(9) Other locally identified unique characteristics.[236]

The Roadless Rule anticipates that the Forest Service will engage in a *highly site-specific analysis* before it can consider logging in IRAs, given the regulation's emphasis on "*locally identified* unique characteristics."[237] The Roadless Rule's preamble reinforces the need for such a site-specific analysis.

> Because of the great variation in stand characteristics between vegetation types in different areas, a description of what constitutes "generally small diameter timber" is not specifically included in this rule. Such determinations are best made through *project specific* or land and resource management plan *NEPA analyses*, as guided by ecological considerations such as those described below.
>
> The intent of the rule is to limit the cutting, sale, or removal of timber *to those areas that have become overgrown with smaller diameter trees*….
>
> [A]ll such *determinations of what constitutes* "*generally small diameter timber*" will consider how the cutting or removal of various size classes of trees would affect the potential for future development *of the stand*, and the characteristics and interrelationships of plant and animal communities associated with the site and the overall landscape. *Site productivity due to factors such as moisture and elevational gradients, site aspect, and soil types will be considered, as well as how such cutting or removal of various size classes of standing or down timber would mimic the role and legacies of natural disturbance regimes in providing the habitat patches, connectivity, and structural diversity critical to maintaining biological diversity*. In all cases, the cutting, sale, or removal of small diameter timber will be consistent with maintaining or improving one or more of the roadless area characteristics as defined in § 294.11.[238] ….
>
> Vegetative management would focus on removing generally small diameter trees while leaving the overstory trees intact. The cutting, sale, or removal of trees pursuant to 294.13(b)(1) *must be clearly shown through project level analysis to*

[236] 36 C.F.R. § 294.11.

[237] *Id.* (emphasis added).

[238] Forest Service, Roadless Area Conservation Rule, 66 Fed. Reg. 3244, 3257 (Jan. 12, 2001) (emphasis added).

contribute to the ecological objectives described. Such management activities are expected to be rare and to focus on small diameter trees.[239]

B. The Forest Service Cannot Log in Roadless Areas Unless it Meets the Roadless Rule's Criteria.

The Draft EA indicates that the Forest Service proposes tree removal in the project area under the exception in the Roadless Rule that allows logging of small diameter trees "[t]o maintain or restore the characteristics of ecosystem composition and structure."[240] The EA states: "Within the roadless area, treatments would consist of prescribed fire, watershed improvements, and hand thinning along fuel breaks to improve holding features."[241] The Draft EA also indicates that "[p]rescribed cutting (hand thinning and mechanical treatment) is proposed within the Peloncillo IRA to reduce stand density and fuel loading of canopy and ladder fuels."[242] Fire, mechanical treatments, and thinning all result in tree removal.

The Draft EA fails to contain the most basic information about project impacts on roadless areas, including the extent or type of treatments in the 56,501-acre Peloncillo inventoried roadless area (IRA). Some fraction of the IRA will apparently not be thinned because the IRA overlaps with two wilderness study areas, although the Forest Service proposes to allow chain-sawing along fire lines.[243]

1. The Forest Service Fails to Demonstrate that Tree Removal in Roadless Areas Will Be "Infrequent."

As noted, the Roadless Rule requires that the "cutting, sale, or removal of timber" will be "infrequent." The Draft EA fails to address this requirement.. Because the proposal could result in tree removal across thousands of acres of the Pelocillo IRA, and treatments occurring in such areas every year for 20 years, the Forest Service's proposal may violate this Roadless Rule provision.

2. The Forest Service Must Undertake a Site-Specific Analysis of Authorized Roadless Area Logging.

As noted above, the Forest Service directed that "[t]he cutting, sale, or removal of trees pursuant to 294.13(b)(1) must be clearly shown through project level analysis to contribute to the ecological objectives described."[244] The Roadless Rule preamble anticipated that the Forest Service would "consider how the cutting or removal of various size classes of trees would affect the potential for future development of the *stand*," and would consider "[s]ite productivity due to factors such as moisture and elevational gradients, site aspect, and soil types … as well as how such cutting or removal of various size classes of standing or down timber would mimic the role and legacies of natural disturbance regimes in providing the habitat patches, connectivity, and structural diversity critical to maintaining biological diversity."[245]

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[239] *Id*. at 3258 (emphasis added).

[240] Draft EA at 20, quoting 36 C.F.R. § 294.13(b)(1)(ii).
[241] Draft EA at 44.
[242] Draft EA at 20.
[243] Draft EA at 19, 21 (Figure 5, showing overlap).
[244] 66 Fed. Reg. at 3258 (emphasis added).

[245] 66 Fed. Reg. at 3257.

The Roadless Rule thus requires that the Forest Service prepare a site-specific, and stand-specific, analysis evaluating factors include elevation, aspect, soils, and the nature of natural disturbance regimes before it approves tree removal within IRAs. The Draft EA fails to demonstrate that the proposed action meets this requirement.

3. The Forest Service Must Ensure That Only Small Trees Are Removed.

The Roadless Rule permits the removal of "generally small diameter timber" if certain other requirements are met. Therefore, the Forest Service may authorize hand treatments or mechanical removal of only "small diameter" trees. The Draft EA fails to acknowledge or address this requirement, violating the Roadless Rule.

We urge the Forest Service to set site-specific (and species-specific) diameter limits to ensure that the agency complies with this rule. To protect old and large trees, no tree larger than 16 inches diameter at breast height or older than 150 years should be cut.

4. The Forest Service Must Demonstrate That Logging Will Maintain or Improve Roadless Area Characteristics.

The Forest Service may avail itself of the Roadless Rule's exceptions barring timber removal within a roadless areas only if that logging "will maintain or improve one or more of the roadless area characteristics as defined in § 294.11."[246] For this project, the Forest Service must, at a site-specific level, evaluate the impacts of logging treatments on *each* of the roadless area characteristics identified in the Rule.

The Draft EA fails to contain this information, punting the analysis to a separate analysis: "A 2001 Roadless Area Conservation Rule Analysis will be conducted to assess impacts of the proposed action on the nine roadless area characteristics (located in project record)."[247] This information must be contained in the EA. The project record that is available to the public via the agency website does not contain the roadless area analysis, thus preventing the public from understanding or commenting on the impacts.

5. The Forest Service Must Demonstrate That Any Logging Will "Maintain or Restore the Characteristics of Ecosystem Composition and Structure."

To avail itself of the Roadless Rule exception it has chosen, the Forest Service must show that such treatments will "maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period."[248]The Draft EA fails to address this mandate with respect to the Peloncillo Roadless Area.

6. The Forest Service Must Identify the Transportation Network It Intends to Use to Facilitate Any Treatments in IRAs.

Because the Roadless Rule prohibits the construction or reconstruction of roads in IRAs, it is critical that any subsequently prepared NEPA document specifically identify the transportation

[246] 36 C.F.R. § 294.13(b)(1).

[247] Draft EA at 45.

[248] 36 C.F.R. § 294.13(b)(1)(ii).

system that the Forest Service intends to authorize for use adjacent to or within each roadless area. At least one federal court has reinforced this duty.

On July 1, 2020, the U.S. District Court for the District of Montana ruled that the Forest Service's approval of a logging project violated the Roadless Rule, ruling that the agency cannot approve logging in inventoried roadless areas without demonstrating that mechanical equipment can access roadless forest without constructing (or reconstructing) roads.[249]

In *Helena Hunters & Anglers*, the Helena-Lewis and Clark National Forest's Tenmile-South Helena Project proposed mechanical logging treatments within the Lazyman Gulch IRA. The Forest Service made the "steadfast representation … that 'no road construction or reconstruction will occur'" within the IRA.[250] "The Forest Service repeatedly contend[ed] that only 'existing routes' or 'existing road templates' [would] be used to access the roadless area."[251] But the final EIS the agency prepared failed to contain "any documents, surveys, photographs, or any other information detailing the physical condition of these existing routes."[252] Nor did the EIS "disclose with any detail the purportedly minimal work necessary to bring heavy logging equipment into the area," thus making it impossible to verify the agency's representations.[253] The court concluded that the agency showed "bad faith" by "conceal[ing] the scope of roadwork intended in the IRA."[254]

Specifically, the court found that the Forest Service failed to:

- Properly classify the type of work needed on routes within the IRA to allow mechanical equipment to access the area;
- Portray the location of any route maintenance on any map; and
- "[C]learly disclose the routes it intends to use" within the IRA.[255]

The court noted that "[b]ecause Federal Defendants … do not disclose a comprehensive travel plan[,] … it is difficult to say precisely where the Forest Service intends to perform roadwork."[256] The court decided that "the Forest Service's conclusion that the Lazyman Gulch [IRA] contains a robust road network that can support large equipment [for logging] without even maintenance is arbitrary and capricious under the APA and in violation of the Roadless Rule."[257]

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[249] *Helena & Anglers Ass'n v. Marten*, 2020 U.S. Dist. LEXIS 115652 (D. Mont. July 1, 2020) at *32-*38, attached as Ex. 6.

[250] *Id*. at *10-*11.

[251] *Id*. at *23.

[252] *Id*.

[253] *Id*.

[254] *Id*. at *24.

[255] *Id*. at 25.

[256] *Id*. at *35.

[257] *Id*. at *38. *See also id*. at 11 (Forest Service's representation that an existing road network could support mechanical treatment without road construction held "to be false, or at best, a gross misrepresentation.").

This decision is relevant to the Peloncillo Firescape Project because the Draft EA fails to identify the transportation system for the project. The Draft EA states that "No new or temporary roads will be constructed within the IRA," which we appreciate, but also stated that the "creation of new access routes … would be limited," without explaining the nature or location of these "access routes."[258]The Forest Service must remedy this lack of necessary information in any subsequently prepared NEPA document.

V. THE PROJECT MUST COMPLY WITH FEDERAL LAW AND THE FOREST PLAN CONCERNING MANAGEMENT OF WILDERNESS STUDY AREAS AND THE GUADALUPE CANYON ZOOLOGICAL AREA.

According to the Draft EA, the proposed action includes no thinning, mechanical treatment, and herbicide application within the Bunk Robinson and Whitmire Canyon WSAs and the Guadalupe Canyon Zoological Area. "Within the Bunk Robinson and Whitmire Canyon WSAs, the Peloncillo FireScape project proposes to conduct prescribed fire and watershed improvement treatments (Figure 4). No prescribed cutting (hand thinning or mechanical treatment) or herbicide application is proposed in these special management areas…Within the Guadalupe Canyon Zoological Area, only prescribed fire and watershed improvement treatments are proposed."[259]

We support these limitations. Excluding thinning, mechanical treatment, and herbicide application from WSAs and the zoological area is consistent with the Wilderness Act, the Arizona Wilderness Act of 1984, and the Coronado National Forest's 2018 Forest Plan.

The Coronado National Forest's 2018 Forest Plan provides specific requirements and guidelines for the WSA. For example, the Forest Plan states that:

- the following activities are *not* suitable to occur within the WSA: "Motorized access," "Timber harvest (*for ecosystem restoration*)," and forest (commercial) and fuelwood products.[260]
- "Wilderness study areas … should be managed to maintain and enhance their wilderness character, which includes scenic resources, primitive recreation settings and fish and wildlife habitats."[261]
- "Wilderness study areas … should be managed to preserve or enhance scenic resources."[262]
- "Timber harvest should not be permitted" in WSAs.[263]
- "New roads should not be constructed" in WSAs.[264]

The Forest Plan also describes the "desired conditions" for WSAs:

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[258] Draft EA at 22.
[259] Draft EA at 19.
[260] Coronado National Forest Plan (2018) at 168 (Table 14) (emphasis added).
[261] *Id*. at 120 (management guidelines for WSAs).
[262] *Id*.
[263] *Id*.
[264] *Id*.

> Wilderness study areas and recommended wilderness are natural in appearance. They provide unconfined opportunities for exploration, solitude, natural risk, challenge, and primitive recreation. When traveling on trails, human encounters are generally limited; when traveling cross country, almost no human encounters are expected. There is little evidence of human developments or human activities. Ecological disturbance processes such as fire, insects, and disease are the primary factors affecting landscape patterns in wilderness study areas. There is little or no evidence of camping activity, unauthorized trails, or trash. Where needed, outfitters and guides provide services to visitors seeking a wilderness experience. Visitor use is in balance with wilderness characteristics.[265]

While the Draft EA contains some information about impacts to WSAs, any subsequently prepared NEPA document must address all of the factors described above, including whether the proposal will result in "little evidence of … human activities." Given the project may take 20 years to implement, evidence of human activity may be widespread and continuous for nearly a generation.

VI. THE ENVIRONMENTAL ASSESSMENT MUST DISCLOSE SITE-SPECIFIC IMPACTS AND CANNOT UTILIZE "CONDITION-BASED MANAGEMENT."

NEPA's review obligations are more stringent and detailed at the project level, or "implementation stage," given the nature of "individual site specific projects."[266] "[G]eneral statements about possible effects and some risk do not constitute a hard look, absent a justification regarding why more definitive information could not be provided."[267]

NEPA requires site-specificity to fulfill two basic purposes: 1) to ensure agencies are making informed decisions prior to acting and 2) to ensure the public is given a meaningful opportunity to participate in those decision-making processes.[268] Federal courts apply these touchstone criteria when evaluating whether an EIS is adequately site-specific.[269]

Analyzing and disclosing site-specific impacts is critical because where (and when and how) activities occur on a landscape strongly determines the nature of the impact. As the Tenth Circuit

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[265] *Id*. at 119.

[266] *Ecology Ctr., Inc. v. United States Forest Serv*., 192 F.3d 922, 923 n.2 (9th Cir. 1999); *see also Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800-01 (9th Cir. 2003); *New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 718-19 (10th Cir. 2009) (requiring site-specific NEPA analysis when no future NEPA process would occur); *Colo. Envtl. Coal. v. Ofc. of Legacy Mgmt*., 819 F. Supp. 2d 1193, 1209-10 (D. Colo. 2011) (requiring site-specific NEPA analysis even when future NEPA would occur because "environmental impacts were reasonably foreseeable").

[267] *Or. Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1134 (9th Cir. 2007) (citation omitted); *see also Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007) (holding the Forest Service's failure to discuss the importance of maintaining a biological corridor violated NEPA, explaining that "[m]erely disclosing the existence of a biological corridor is inadequate" and that the agency must "meaningfully substantiate [its] finding").

[268] *Stein v. Barton*, 740 F. Supp. 743, 749 (D. Alaska 1990).

[269] *See WildEarth Guardians*, 790 F.3d at 921-25 (holding EIS inadequate for failure to disclose location of moose range); *Or. Nat. Desert Ass'n v. Rose*, 2019 WL 1855419 (9th Cir. 2019) (holding environmental analysis violated NEPA by failing to establish "the physical condition of [roads and trails] and authorizing activity without assessing the actual baseline conditions").

Court of Appeals has explained, the actual "location of development greatly influences the likelihood and extent of habitat preservation. Disturbances on the same total surface area may produce wildly different impacts on plants and wildlife depending on the amount of contiguous habitat between them."[270] The Court used the example of "building a dirt road along the edge of an ecosystem" and "building a four-lane highway straight down the middle" to explain how those activities may have similar types of impacts, but the extent of those impacts – in particular on habitat disturbance – is different.[271] Indeed, "location, not merely total surface disturbance, affects habitat fragmentation,"[272] and therefore location data is critical to the site-specific analysis NEPA requires. Merely disclosing the existence of particular geographic or biological features is inadequate; agencies must discuss their importance and substantiate their findings as to the impacts.[273]

Courts in the Ninth Circuit have taken a similar approach. For example, in March 2020, the U.S. District Court held that the Forest Service's condition-based management approach to a large logging proposal on the Tongass National Forest violated NEPA.[274] The court explained that "NEPA requires that environmental analysis be specific enough to ensure informed decision-making and meaningful public participation. The Project EIS's omission of the actual location of proposed timber harvest and road construction within the Project Area falls short of that mandate."[275]

The district court also concluded that the Forest Service's "worst case analysis" was insufficient, explaining: "This approach, coupled with the lack of site-specific information in the Project EIS, detracts from a decisionmaker's or public participant's ability to conduct a meaningful comparison of the probable environmental impacts among the various alternatives."[276] Consequently, the court concluded that

> By authorizing an integrated resource management plan but deferring siting decisions to the future with no additional NEPA review, the Project EIS violates NEPA. The Forest Service has not yet taken the requisite hard look at the environmental impact of site-specific timber sales on Prince of Wales over the next 15 years. The Forest Service's plan for condition-based analysis may very well streamline management of the Tongass ... however, it does not comply with the procedural requirements of NEPA, which are binding on the agency. NEPA favors coherent and comprehensive up-front environmental analysis to ensure ...

[270] *New Mexico ex rel. Richardson*, 565 F.3d at 706.

[271] *Id*. at 707.

[272] *Id*.

[273] *Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007).

[274] *Southeast Alaska Conservation Council v. United States Forest Serv*., 2020 U.S. Dist. LEXIS 43499 (D. Alaska Mar. 11, 2020), attached as Ex. 7. The Forest Service has appealed this decision.

[275] *Id*. at *19 (citations omitted).

[276] *Id*. at *27.

> that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.[277]

The Peloncillo FireScape Project is apparently a project-level decision. There is no indication that the Forest Service intends the project to be a programmatic decision, or that the agency intends to undertake additional NEPA analysis. As a result, the agency cannot adopt a "condition-based" management approach in its NEPA analysis, and any analysis must include the detailed information and analysis that NEPA and the CEQ regulations require because there will evidently be no further NEPA analysis. Unfortunately, the Draft EA fails to contain this site-specific information, which NEPA requires.

Watershed Improvement

The Draft EA describes what could be a lengthy and varied mix of activities under the heading of Watershed Improvement. The way the section is presented, it appears that the Forest Service has not identified specific problems at specific locations, and in turn cannot prescribe specific actions.

> Watershed improvement treatments would be designed to help watersheds trend towards desired conditions. Up to 150 acres a year could be treated with erosion control techniques, planting, or seeding… Erosion control activities in upland areas where erosion occurs would be considered where needed to meet the above core principles and project objectives.[278]

This is another example of condition-based management, discussed above. Based on the core principles and objectives listed in the Draft EA, the Forest Service might enter sensitive habitat for an imperiled species with a bulldozer without any site-specific analysis of those effects.

> Stabilization techniques would include the use of hand tools (including shovels, rakes, and pry bars), and, in some cases, heavy equipment (including tractors, backhoes, and bulldozers), depending on site needs, access, and resource concerns. [279] Emphasis added.

The Forest Service must disclose and analyze the site-specific evaluation of problems and analyze the effects of a proposed solution. This is an example of where the Forest Service must disclose to the public accurate and detailed description of baseline conditions, and a hard look at the effects of proposed treatments. The Draft EA fails to do so.

VII. LIVESTOCK GRAZING IN THE PROJECT AREA IS INCONSISTENT WITH THE PROJECT OBJECTIVES

The Center supports the reintroduction of fire to the Peloncillo Mountains. These ecosystems evolved with fire, and prior to Euro-American settlement, rare species were not threatened by fire because the natural cycle had not been interrupted by damaging stressors of logging, fire

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[277] *Id*. at *27-*28 (internal citations and quotations omitted). The Forest Service should not interpret the Alaska District's decision to somehow endorse the use of condition-based analyses for environmental assessments. Where the exercise of site-specific discretion is material to a project's environmental consequences, NEPA requires consideration of site-specific proposals and alternatives, *regardless* of whether the effects are "significant." 42 U.S.C. § 4332(2)(C), (E).

[278] Draft EA at 15 (emphasis added).

[279] Draft EA at 15.

suppression, and livestock grazing. The continuation of livestock grazing in the project area is inconsistent with the objectives of restoring functional fire regimes.

The Coronado National Forest contains more former grassland than any other National Forest in Region 3. This is attributed to fire suppression and livestock grazing. This project seeks to address the first of those problems, and the Forest Service acknowledges that it cannot fully address grassland issues without also addressing the issue of livestock grazing.

> Livestock grazing has occurred within the analysis area for over 100 years. In the late 1800s, widespread unregulated grazing resulted in erosion, heavy surface runoff, flooding, and down-cutting of streams throughout the southwest. Livestock consumption of herbaceous fine fuels, combined with active fire suppression beginning in the early 1900s, has likely contributed to a decreased fire frequency and subsequent invasion of many grasslands by woody plants. The effects of these activities and events, especially the increase in woody vegetation, are still evident in the periphery of some portions of the project area. The proposed action, in part, is designed to correct the effects of historic management, but these effects will likely continue to influence resource conditions, especially soil condition, for the foreseeable future.[280]

Nowhere in the Draft EA is there a discussion of the need for, and benefits of, a permanent reduction in livestock grazing to advance project objectives. At best, the Draft EA identifies a Project Design Features to reduce livestock grazing to provide sufficient fine fuels to carry surface fire, and to allow for plant recovery following a fire. In both cases, it appears that the reduction in grazing is limited to a single season.

> To ensure success of prescribed fire operations, it is imperative to coordinate plans with the affected grazing permittees and adjacent landowners. Areas to be burned must either receive sufficient growing season rest prior to the burning period or be grazed at a conservative enough level to ensure fine fuels are present to carry the fire. Prior to re-stocking, burned areas must receive sufficient growing season rest to ensure plant recovery and soil protection. To determine if the range is ready to be stocked, an inspection will be done collaboratively between the grazing permittee and range management personnel.[281]

Instead, the Draft EA proposes expensive operations—mechanical treatments and herbicide application over a majority of the project area—with potentially substantial negative impacts, while continuing the grazing practices that create the stated need for such operations. This approach violates NEPA.

VIII. THE DRAFT EA FAILS TO ADEQUATELY DISCLOSE AND ANALYZE THE IMPACTS TO IMPERILED PLANTS AND WILDLIFE

As described in the Draft EA, a variety of rare and imperiled species occur within the project area. We believe the project should be designed and implemented to protect and improve habitat for all native species, but we are particularly concerned with the project's effects on imperiled species and rare endemics.

[280] Draft EA at 39, emphasis added.
[281] Draft EA at 105.

The Draft EA states that the "Southwestern willow flycatcher, Northern aplomado falcon, loach minnow, spikedace, Yaqui catfish, Yaqui chub, Arizona eryngo, Cochise pincushion cactus, Huachuca water-umbel, swale paintbrush, and Wright's marsh thistle do not occur in the action area or downstream of it, generally lacking suitable habitat or movement potential, and are not anticipated to be affected."[282] However, all of these species are federally designated Threatened or Endangered species, and the project area is within the potential range of the species, with the exception of the Yaqui chub, the range of which is a few miles to the southwest of the project area, in the Baker Canyon WSA. The fact that there is no current evidence of occurrence in the project area does not absolve the Forest Service of considering the impacts of the proposed action on existing and future habitat for these imperiled species.

Jaguar

The Draft EA acknowledges that the proposed action adversely affect jaguars by causing them to shift their home ranges and travel longer distances, and increase the potential for various stressors on individual jaguars. [283] The Draft EA proposes to address these impacts by avoiding riparian areas and "largely" avoiding drainages.

> Though jaguars have not been documented within the Peloncillo Mountains since 1996, it is an expected corridor for travel, and contains designated critical habitat…The proposed action may cause jaguars, if present, to shift their home range and travel longer distances, possibly through less suitable habitat. Extra travel would require jaguars to expend additional energy and increase the potential for encounters with humans, vehicles, potential competitors, and other stresses. Treatments would avoid riparian areas and high-gradient streams and would largely avoid drainages.[284]

However, the Draft EA fails to analyze these obstacles in the context of other obstacles to jaguar migration beyond the project boundaries, as it must in order to comply with its duty to address the project's cumulative impacts pursuant to NEPA, nor does the Draft EA analyze an alternative or design features that would reduce the impacts to jaguars. Furthermore, the Draft EA fails to define "high-gradient streams" and "drainages" and fails to define when and how operations would avoid drainages. Thus, the Draft EA deprives the public and the decisionmaker (and those implementing the decision) where treatments would and would not occur, a violation of NEPA's hard look mandate.

Mexican long-nosed bat

The Draft EA acknowledges that Mexican long-nosed bats could occur in the project area, and proposes two measures to mitigate impacts to the species.[285]

> • Implementation would include retention of sustainable populations of agave, and agave habitat is widely dispersed through the project area.
>
> • Known and potential bat roosts would be avoided, and biophysical qualities that contribute to roost quality would not be altered.

[282] Draft EA at 50.
[283] Draft EA at 51.
[284] Draft EA at 51.
[285] Draft EA at 51.

However, the Draft EA does not define what qualifies as a sustainable population of agave, does not map their location or extent, nor does it indicate what actions the Forest Service would tke (or withhold) so that such populations would be retained. Similarly, the Draft EA does not define the process by which potential bat roosts would be identified and protected. Furthermore, the Draft EA does not identify the biophysical qualities that contribute to roost quality. In the absence of these definitions, it is difficult to see how the Forest Service will be able to implement these conservation measures, or how they could analyze the specific impacts of the proposed action. Any subsequently prepared NEPA document must address these omissions.

Mexican wolf

The Draft EA acknowledges that wolves occur in the project area, and proposes to adopt protection measures as necessary. [286]

> If wolves take up long-term residency on the Peloncillo EMA, protection measures would be implemented as necessary. [287]

However, the Draft EA does not indicate what protection measures might be implemented or how they would be determined to be necessary. In the absence of these definitions, it is difficult to see how the Forest Service will be able to implement these conservation measures, or how they could analyze the specific impacts of the proposed action. Mitigation measures that are totally undefined cannot be considered to reduce the action's impacts.

Yellow-billed cuckoo

The Draft EA acknowledges that yellow-billed cuckoo occur nearby the project area, and proposes to avoid potential cuckoo habitat during the breeding season. [288]

> Planned treatments would avoid potential YBCU habitat during the breeding season (WFP-12).[289]

However, the Draft EA does not indicate how potential YBCU habitat will be identified and what measures are necessary to protect the habitat from fire impacts, nor does the Draft EA indicate how foraging habitat—which is far more extensive than nesting habitat—will be identified and protected. Further, while not burning YBCU habitat during the breeding season may avoid direct "take" of a cuckoo, it may still destroy YBCU habitat. Such impacts must be disclosed.

Chiricahua leopard frog

The Draft EA acknowledges that Chiricahua leopard frog occur in the project area and that the proposed action can adversely affect the leopard frog and its critical habitat. [290]

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[286] Draft EA at 52.
[287] Draft EA at 52.
[288] Draft EA at 53.
[289] Draft EA at 53.
[290] Draft EA at 54.

> Forest management activities, which directly or indirectly modify stream or wetland habitats, have the potential to adversely affect Chiricahua leopard frog (CLF) and its designated critical habitat. However, because only select actions such as prescribed burns would occur within potential CLF habitat, and since they would be preferentially conducted during CLF's inactive period (WFP-9) and avoid staging near sensitive sites (WFP-16), it is unlikely that the proposed action would directly result in death or injury of frogs... Herbicides can pose a risk to aquatic organisms; however, design features for herbicide application (especially H-5, H-6, and H-8) as well as the proposed action only including spot treatments on woody plant species, mitigates any reasonably expected negative effects to frogs.[291]

The section on Chiricahua leopard frog references three design features:

> H-5: Picloram will not be used where the water table is within 40 inches of the surface; where soil permeability would be conducive to water contamination.
>
> H-6: Only herbicides labeled for aquatic use (i.e., Rodeo (glyphosate) Renovate (triclopyr) and Weedar 64 (2,4-D amine)) will be used within 30 feet of streams and other bodies of water.
>
> H-8: Areas used for mixing herbicides and cleaning equipment shall be located where spillage will not run into surface waters or result in ground water contamination.[292]

This analysis significantly understates both the extent of the application of herbicide in the proposed action—53,799 acres, equivalent to 63% of the project area—and the potential for chemical herbicides to migrate and contaminate water, as described in detail above in these comments. Any subsequently prepared NEPA document must address these potential impacts.

Swale paintbrush

The Draft EA acknowledges that swale paintbrush occurs near the project area, and that potential habitat occurs within the project area. The Draft EA also indicates that the area has been under-surveyed and unevaluated.[293]

> The species is a single-site endemic with the only known extant population 3 miles southeast of the project boundary. In a recent FWS survey in the Peloncillo EMA, potential suitable habitat was found but no individuals were detected (FWS 2023). The species occupies relatively mesic areas/microsites within open grasslands. Potential habitat exists within Cloverdale Valley but has been largely unevaluated and under-surveyed. However, most of the lowland/grassland portions of Cloverdale Valley are in private ownership, and the amount of potential habitat that occurs on National Forest System (NFS) land is relatively small.
>
> To minimize direct effects to the species, ground-disturbing activities and treatments will be avoided during its growing season in un-surveyed potential habitat… Introduction of

[291] Draft EA at 54.
[292] Draft EA at 105.
[293] Draft EA at 54.

> nonnative species that might spread and outcompete swale paintbrush within grassland canopy gaps are a possible indirect effect from the proposed actions.[294]

This analysis fails to acknowledge the extent of the application of herbicide in the proposed action—53,799 acres, equivalent to 63% of the project area—and the potential impact to swale paintbrush. While the Draft EA acknowledges that invasive plants are a threat to swale paintbrush and that activities like mechanical thinning are a significant source of invasive nonnative plants, the Draft EA then fails to analyze the potential impacts on the sale paintbrush.

IX. THE FOREST SERVICE MUST CONSIDER PREPARING AN EIS.

A. An Agency Must Prepare an EIS If There Are Questions as to Whether Impacts May Be Significant.

NEPA requires federal agencies to prepare a full environmental impact statement (EIS) before undertaking "major Federal actions significantly affecting the quality of the human environment."[295] The Ninth Circuit agrees.

> We have held that an EIS *must* be prepared if 'substantial questions are raised as to whether a project ... *may* cause significant degradation to some human environmental factor.' To trigger this requirement a 'plaintiff need not show that significant effects *will in fact occur*,' [but instead] raising 'substantial questions whether a project may have a significant effect' is sufficient.[296]

The Tenth Circuit concurs. "If the agency determines that its proposed action *may* 'significantly affect' the environment, the agency must prepare a detailed statement on the environmental impact of the proposed action in the form of an EIS."[297]

If an agency "decides not to prepare an EIS, 'it must put forth a convincing statement of reasons' that explains why the project will impact the environment no more than insignificantly. This account proves crucial to evaluating whether the [agency] took the requisite 'hard look.'"[298]

"Significance" under NEPA requires consideration of the action's context and intensity.[299] An agency must analyze the significance of the action in several contexts, including short- and long-term effects within the setting of the proposed action (including site-specific, local impacts).[300] Intensity refers to the severity of the impact and requires consideration of ten identified factors that may generally lead to a significance determination, including:

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[294] Draft EA at 54.

[295] 42 U.S.C. § 4332(C).

[296] *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1149-50 (9th Cir. 1998) (citations omitted) (emphasis original). *See also Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 864-65 (9th Cir. 2005) ("To trigger this [EIS] requirement a plaintiff need not show that significant effects will in fact occur, but raising substantial questions whether a project may have a significant effect is sufficient." (internal quotations, citations, and alterations omitted)).

[297] *Airport Neighbors Alliance v. U.S.*, 90 F.3d 426, 429 (10th Cir. 1996) (citation omitted) (emphasis added).

[298] *Ocean Advoc.*, 402 F.3d at 864.

[299] 40 C.F.R. § 1508.27.

[300] *Id.* § 1508.27(a).

(1) unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas;

(2) whether the action is likely to be highly controversial;

(3) whether the action may have cumulative significant impacts; and

(4) the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.[301]

With respect to the degree to which the environmental effects are likely to be highly controversial, the word "controversial" refers to situations where "'substantial dispute exists as to the size, nature, or *effect* of the major federal action.'"[302]

B. If the Project Is Likely to Have Significant Impacts, the Forest Service Must Prepare An EIS.

As the Peloncillo FireScape Project proposes the application of a large volume of a large number of herbicides across 53,799 acres, and mechanical treatment across 42,885 acres—equivalent to 63% and 50% of the landscape, respectively—the project is likely to have substantial negative, unintended and cumulative impacts, thus requiring the preparation of an EIS.

Second, the Peloncillo FireScape project overlaps, and thus will directly impact, a number of designate special areas.

- The Guadalupe Canyon Zoological Area.
- Bunk Robinson and Whitmire Canyon Wilderness Study Areas.
- The 56,501-acre Peloncillo Inventoried Roadless Area
- Numerous imperiled species, including jaguar, Mexican wolf, and Chiricahua leopard frog.

Third, the effects of this project have the potential to be highly controversial.[303] In this context, the term "controversial" refers to "cases where a substantial dispute exists as to the size, nature, or effect of the major Federal action rather than to the existence of opposition to a use."[304] Courts explain:

> A substantial dispute exists when "evidence, raised prior to the preparation of an EIS or FONSI, casts serious doubt upon the reasonableness of the agency's

[301] *Id.* § 1508.27(b).

[302] *Town of Cave Creek v. FAA*, 325 F.3d 320, 331 (D.C. Cir. 2003) (quoting *North American Wild Sheep v. U.S. Department of Agriculture*, 681 F.2d 1172, 1182 (9th Cir. 1982)) (emphasis in original). *See also Middle Rio Grande Conservancy Dist. v. Norton*, 294 F.3d 1220, 1229 (10th Cir. 2002) (same); *Town of Superior v. U.S. Fish and Wildlife Serv.*, 913 F. Supp. 2d 1087, 1120 (D. Colo. 2012) (same).

[303] 40 C.F.R. § 1508.27(b)(4).

[304] *Sierra Club v. United States Forest Serv*., 843 F.2d 1190, 1193 (9th Cir. 1988) (finding that where Sierra Club presented evidence from experts showing the EA's inadequacies and casting doubt on the agency's conclusions, "this is precisely the type of 'controversial' action for which an EIS must be prepared.").

> conclusions." *Nat'l Parks* [*& Conservation Ass'n v. Babbitt*, 241 F.3d 722, 736 (9th Cir. 2001)] (internal citation omitted). Such evidence generally challenges the scope of the scientific analysis, the methodology used, or the data presented by the agency. *See Blue Mountain* [*Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212-13 (9th Cir. 1998)] (citing the Forest Service's failure to consider the recommendations and data of an independent scientific report that ran contrary to the proposed action as evidence of controversy).[305]

Of particular concern is the application of such a large volume of a large number of herbicides across 53,799 acres, and mechanical treatment across 42,885 acres—equivalent to 63% and 50% of the landscape, respectively—across an arid and sensitive landscape that provides isolated sky island habitat to an array of threatened, endangered, and endemic species.

Fourth, the Peloncillo Project may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.[306] As discussed above, the proposed action may adversely affect the Mexican wolf, jaguar, and Chiricahua leopard frog, among other threatened and endangered species.

CONCLUSION.

The Center for Biological Diversity supports the overall objectives of the Peloncillo FireScape Project to restore fire across the project area. However, the Draft EA for the Peloncillo FireScape Project proposes a project that is dominated by herbicides and mechanical thinning, and fails to adequately disclose and analyze the impacts of these actions.

We urge the Forest Service to revise the proposed action to greatly reduce the implementation of mechanical thinning, eliminate the application of herbicides in wildlands, limit grazing, and focus on the actions necessary to safely and effectively restore fire at the landscape scale. We would welcome the opportunity to discuss these issues with you further, and to work with you on a project that achieves the goals of reducing the risk of large-scale, high-severity fire, restoring fire to the landscape, and protecting and restoring habitat for native species.

Thank you for considering these comments.

Sincerely,

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[305] *Anglers of the Au Sable v. United States Forest Serv.*, 565 F. Supp. 2d 812, 827-828 (E.D. Mich. 2008).

[306] 40 C.F.R. § 1508.27(b)(9).